

B-310

MINDEL[®] B-310 resin is a 10% glass reinforced thermo-plastic resin developed specifically for molded electrical connector applications requiring excellent dimensional stability, low warpage, and good performance at elevated temperatures and high humidities. This material has a high deflection temperature, good creep resistance and a UL 94 rating of V0 at 1/32nd inch (0.8 mm).

MINDEL B-310 resin combines the best properties of both amorphous and semi-crystalline polymers, providing good stress cracking resistance to common solvents with low, relatively uniform shrinkage.

This resin has nearly isotropic shrinkage and therefore features very low warpage, usually less than 50% of that typically encountered with glass-reinforced thermoplastic polyesters. Consequently, MINDEL B resins offer the ability to mold to very close tolerances.

MINDEL B-310 resin has good flow and components containing thin sections can be easily molded using conventional equipment. The currently available colors of MINDEL B-310 resin are black and gray.

Typical Properties of MINDEL B-310 Resin

Property	ASTM Test Method	Typical Values ⁽¹⁾			
		U. S. Customary Units		SI Units	
		Value	Units	Value	Units
Mechanical					
Tensile Strength	D 638	12.8	kpsi	88	MPa
Tensile Elongation at Break	D 638	3.3	%	3.3	%
Flexural Strength	D 790	16.7	kpsi	115	MPa
Flexural Modulus	D 790	650	kpsi	4.5	GPa
Izod Impact, Notched	D 256	1.1	ft-lbs/in	60	J/m
Thermal					
Deflection Temperature at 264 psi (1.8 MPa), annealed	D 648	316	°F	158	°C
Flammability ⁽²⁾ Rating, at .031" (0.8 mm) thickness	UL 94	V0		V0	
Electrical					
Dielectric Strength, Short Time, 1/8" (3.2 mm)	D 149	394	V/mil	16	kV/mm
Dielectric Constant, 60 Hz	D 150	3.4		3.4	
Dielectric Constant, 10 ⁶ Hz		3.3		3.3	
Dissipation Factor, 60 Hz	D 150	0.001		0.001	
Dissipation Factor, 10 ⁶ Hz		0.010		0.010	
Arc Resistance	D 495	45	sec	45	sec
General					
Specific Gravity	D 792	1.41		1.41	
Moisture Absorption, 24 hours	D 570	0.13	%	0.13	%
Rockwell Hardness	D 785	73	M	73	M
Melt Flow at 527°F (275°C), 44 psi (0.3 MPa)	D 1238	7.5	g/10 min	7.5	g/10 min
Mold Shrinkage, Flow Direction	D 955	0.4	%	0.4	%
Mold Shrinkage, Transverse Direction		0.5	%	0.5	%

⁽¹⁾ Actual properties of individual batches will vary within specification limits.

⁽²⁾ This flammability rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

Drying

MINDEL B-310 resin must be dried before fabricating in a dehumidified hopper drier or circulating hot air oven to produce the recommended moisture level.

Use of an insulated hopper drier is preferred. Air temperature measured at the hopper drier inlet should be 300° to 325°F (149° to 163°C) and have a dewpoint of no higher than -20°F (-29°C). The outlet air temperature should not be less than 250°F (121°C), with a residence time of three to four hours.

For 1" to 2" deep tray drying, pellets should be dried at 325°F (163°C) for three hours.

Drier outlet air temperature, which can vary with air velocity, bed size, inlet air temperature, and other factors, may be difficult to measure. For this reason, the pellet temperature should be held at 275°F (135°C) minimum for three to four hours, while avoiding temperatures above 325°F (163°C).

Injection Molding

MINDEL B-310 resin can be readily molded in most reciprocating-screw injection molding machines. Stock temperatures will generally range from 520° to 600°F (271° to 315°C) depending on mold design and the type of equipment used. Use the lowest stock temperature at which that part will fill. In most cases, fast injection speeds and moderate injection pressures should be used. Mold temperatures of 150° to 210°F (65° to 99°C) are recommended.

The thermal stability of this resin has been verified by four consecutive moldings of 100% regrind, which resulted in only minimal property loss. Therefore, the routine use of 30% regrind should be possible.

Standard Packaging and Labeling

MINDEL B-310 resin is packaged in foil lined, multi-wall paper bags containing 55.1 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 lot number, and the net weight.

Precautionary Labeling

On the basis of the toxicological, physical, and chemical properties of MINDEL B-310 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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