

MG-540

MINDEL[®] MG-540 resin is a glass and mineral reinforced thermoplastic resin. This material offers good dimensional stability and resistance to automotive fuels, combined with good thermal stability suggesting applications requiring extended use at temperatures up to 302°F (150°C).

Potential applications include automotive throttle bodies and other devices requiring high temperature performance, high stiffness, and exceptional dimensional stability.

Typical Properties of MINDEL MG-540 Resin

Property	ASTM Test Method	TYPICAL VALUES ⁽¹⁾			
		U.S. Customary Units		SI Units	
		Value	Units	Value	Units
Mechanical					
Tensile Strength	D 638	14,500	psi	100	MPa
Tensile Modulus	D 638	1,600	kpsi	11.0	GPa
Flexural Strength	D 790	20,700	psi	143	MPa
Flexural Modulus	D 790	1,400	kpsi	9.7	GPa
Izod Impact Strength	D 256	0.8	ft-lb/in	43	J/m
Thermal					
Deflection Temperature at 264 psi (1.8 MPa), annealed	D 648	336	°F	169	°C
General					
Specific Gravity	D 792	1.6		1.6	
Moisture Absorption, 24 hours	D 570	0.1	%	0.1	%

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

Drying

MINDEL MG-540 resin must be dried before fabricating in a dehumidified 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° to 325°F (149° to 163°C) and have a dewpoint of no higher than -22°F (-30°C). The outlet air temperature should not be less than 275°F (135°C) with a residence time of four 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 four 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 MG-540 resin are similar to those of GF thermoplastic polyesters, except for the temperatures. Melt temperatures of 518° to 608°F (270° to 320°C) and injection pressures of 15,000 to 22,000 psi (100 to 150 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. Injection speed should be slow to medium.

If degradation is experienced, certain cycle modifications can be made in addition to reducing barrel temperatures: reduce back pressure, reduce screw speed, and/or check drying conditions.

To produce parts with low residual stresses, mold temperatures of 250 - 285°F (120 - 140°C) should be used.

Standard Packaging and Labeling

MINDEL MG-540 resin is packaged in 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 MG-540 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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