



Polifil[®] TPO – Thermoplastic Polyolefin (Filled and Unfilled)

Handling

Polifil[®] TPO does not absorb atmospheric moisture; however resins may harbor surface moisture. Reseal opened containers as soon as possible. To avoid condensation on the resin during cold weather, material should be stored in unopened containers at room temperature for at least 24 hours.

Pre-Drying

Polifil[®] TPO resins should not require pre-drying. Critical appearance applications, use of older resin stocks, darker colors, or transfer of material from colder to warmer storage conditions may make pre-drying necessary. Pre-drying is also recommended whenever moisture splay or voiding is seen in molded parts.

Recommended drying conditions are 1 to 2 hours at 180-210°F (82-99°C). A dehumidified air (desiccant) dryer is recommended but simple hot air dryers may also be used. Return air filters should be checked regularly to insure proper air flow. DO NOT dry in excess of 24 hours or discoloration and property deterioration may result.

Mold Surface Temperature

Higher mold temperatures generally produce higher luster on parts molded for polypropylene based resin; such as Polifil[®] TPO; with lower molded-in stress. Where appearance is not important, molds may be run as cold as possible while avoiding condensation in the mold. This is generally 50-80°F (10-27°C), depending upon the dew point of the surrounding air. For higher gloss, temperatures of 100-140°F (38-60°C) should be used. For maximum efficiency, the appearance half of the mold (usually the cavity) can be run at the higher temperatures, while the other half (usually the core) is run at the minimum temperature possible without condensation.

Molding Temperatures

Stock melt temperatures should be kept within a range of 400-450°F (204-232°C), with best results normally obtained in the middle. Shot size, part geometry, residence time and cooling patterns should all be considered.

Recommended zone settings are as follows:

REAR	390-410°F	(199-210°C)
MIDDLE	410-420°F	(210-215°C)
FRONT	420-430°F	(215-221°C)
NOZZLE	430-440°F	(221-227°C)

Machine Settings

Polifil[®] TPO resins are Polypropylene based and should be considered a crystalline resin with low viscosity and rapid cooling characteristics. Where mold design allows, fast injection speeds should be used to maximize appearance and limit molded-in stresses. Packing pressure must be maintained until the gate solidifies (or until the part is solidified for hot drops) or excessive warp and sink marks will result. Moderate screw speed, 50-100 RPM, and moderate back pressure, 50-100 psi, is appropriate for most TPO.