



“Speed, Quality, Economy...”

## Endothermic Processing Aids Recommendations for Use in Injection Molding

Keep in mind, that in conjunction with the processing changes listed below, you can vary the density of the melt flow by adjusting the backpressure and the melt viscosity. There are three major areas where minor processing adjustments can be made to achieve the optimum cycle time, surface appearance, and uniform small cell structure. The following adjustments should be attempted one at a time to properly evaluate the results.

1. Modify the melt temperature at ten-degree increments. In some cases, this may mean lowering temperatures if it appears the processing aid is being activated too soon and gas is being lost back through the feed throat and hopper. Typically, raising temperatures will assist in creating a uniform cell structure because of the modified expansion rate. Raising temperatures should have little effect, if any, on the overall cycle time because the endothermic material will absorb heat faster and cool the melt more quickly than with virgin resin alone.
2. Adjust the backpressure. Because the processing aid will generate more pressure in the melt flow due to gas production, the maximum density reduction at any particular melt temperature will be just before a short shot.
3. Bring the mold to ambient temperature. The endothermic processing aid absorbs heat and cools very quickly. Rapid cooling of the part surface will create a thicker skin and non-uniformity in cell structure.

### TROUBLE-SHOOTING COMMON PROBLEMS

<u>PROBLEM</u>	<u>POSSIBLE CAUSES</u>	<u>PROBLEM</u>	<u>POSSIBLE CAUSES</u>
Post Blow	Cooling cycle too short. High stock temperature. Mold temperature high. Over-packed shot. Non-uniform manifold temperature. Too much processing aid	Material Discoloration	Stock temperature too high. Hot spots in tool. Contamination. Residence time too long. Nozzle too hot. Dead spots in manifold or runner system.
Heavy Part	Shot size too large. Fill time too slow. Stock temperature too low. Not enough processing aid.	Poor Weld Line Strength	Stock temperature too high. Flow length too long. Inadequate venting. Injection speed too slow.
Short Fill	Stock temperature too low. Shot size too small. Heater band malfunction. Nozzle not fully open. Mold not properly vented. Not enough processing aid.	Poor Surface Appearance	Too much processing aid. Stock temperature too low. Flow length too long. Mold not properly vented. Injection speed too slow.
Brittle Parts	Wet material Contamination. Stock temperature too high. Improper processing aid.	Flash	Clamp pressure too low. Too much processing aid. Shot size too great.