



“Speed, Quality, Economy...”

Sink Marks in Injection Molding

Endothermic Processing Aids

Shallow depressions or “sinks” that appear on the surface of molded parts are a frequent phenomenon in injection molding. The appearance of sinks can cause rejects due to poor surface appearance or possible part failure.

An inexpensive method to address this molding defect is to add a minimal amount of endothermic processing aid to the polymer being processed. As the processing aid begins to decompose during the normal injection molding cycle, it releases gases that contribute internal pressures in the melt flow to help offset normal polymer shrinkage. At the recommended levels, no foaming (density reduction or surface splay) will occur. In many cases, it is also possible to reduce injection pressures due to the gases generated by the processing aids.

PROCESSING:

- ▶ Processing aids can be added to the resin and tumble-blended using a large-pellet concentrate, or metered at the throat using standard metering equipment.

USAGE

- ▶ The amount necessary will vary based on part design, wall thickness, resin type, machine design, etc. Normally, 0.10% to 0.25% level in the finished part will effectively eliminate sink marks.

PROCESSING CHANGES

- ▶ In the infrequent cases where sink defects persist in spite of the addition of a processing aid; physical, mechanical and processing parameters may need to be modified.