



Cycletime Tips - Automotive

Volume 20: Metallic Pigments

In an attempt to eliminate paint/plating from automotive components, many molders are looking toward molded-in colorants as a means of reducing costs and environmental impact in injection molded components. Many attempts have been deemed unsuccessful in the effort to produce a metallic appearance to offset secondary operations. While this effort has merit, there are some considerations that must be researched in order to make the program a success.

The first step is to gain a thorough understanding of what your customer's aesthetic demands are as you move forward. "Dropping-in" a metallic based colorant and hoping to produce good parts in existing applications generally is an exercise in futility. These pigment flakes will reflect light depending on the way that they are oriented. If you have restrictive gates, varying wall thickness, or weld lines within your part, this will create an unsightly flow line. In order to minimize the appearance of such defects, elevated melt and mold temperatures are used in conjunction with slower filling rates. If the part is concealed in the gate area and in convergent areas of multiple flow fronts, this technology could be for you. Many colorant suppliers have reduced the particle size to lessen the impact that filler orientation has on part appearance, but this will also result in a less lustrous effect.

A long-term strategy, however, will include designing a part around this colorant technology. Gating into a large removable tab, eliminating holes and tall ribs within the part, and minimizing air entrapment are some sound strategies for designing parts for consumption of metallic pigments. Additionally, in most cases the resulting part will not have the rich finish that the painted ones do. At best, the parts will have a die-cast type appearance rather than chrome plated appearance. Please contact your colorant supplier before moving forward. Attempt to obtain some step plaques that depict the effects that wall variation and holes will have on the targeted base material. As always, please feel free to contact Jim Cardinal or myself should you require further insight.

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