

ChromaFlair® Pigment Plastic Application Guidelines



ChromaFlair pigment is suitable for use with many technologies used to manufacture and decorate plastic molded parts including:

- injection molding
- extrusion blow molding
- film extrusion
- in-mold decorating
- thermoforming
- calendaring
- reactive in-mold coating.

Polymer Systems

Pigment effects are most successful when used with clear resin polymer systems such as:

- polycarbonate (PC)
- polypropylene (PP)
- high-density polyethylene (HDPE)
- thermal polyurethane (TPU)
- polyethylene terephthalate (PET)
- acrylonitrile butadiene styrene (ABS)
- styrene acrylonitrile (SAN)
- cellulose acetate (CA)
- natural rubber
- nylon 12.

Color saturation and color travel are greatest when using a clear resin in combination with a smooth, high-gloss part finish. HDPE and other translucent resins are also usable; however, the resulting part will exhibit a more understated color effect. Matte-finish part designs reduce the color shift and typically require greater pigment loading.

Application Methods

Masterbatch production is effective when using twin-screw, co-rotating extruders and Banbury mixers. Parts molded in multiple passes using 100% recycle show little color and particle size change. If currently molding with mica or aluminum flake pigments, consider those process conditions as reasonable starting parameters for this pigment.

As with all flake pigments, flow lines must be considered. For new tool designs, adjust gate location in order to minimize and conceal flow lines. Some processes such as film-insert molding and in-mold decorating can completely eliminate the presence of flow lines and deliver a high-quality appearance for a fraction of the cost of painting.

Loading

The amount of pigment required to generate a strong color effect depends on many factors including:

- surface geometry
- use of resin
- wall thickness
- surface gloss
- presence and level of other pigments.

Begin adding pigment at a rate of 0.2 – 0.5 percent pigment by weight. Loading levels can be adjusted to achieve a desired look and to reduce cost. The amount of pigment can be further reduced by using multi-layer blow molding and sheet extrusion techniques. JDSU recommends using a light loading in the outer layer backed by an opaque inner layer. The inner layer can be black or colored to complement the pigment.