



Extra SPARKLE SILVET[®] / SILVEX[®] For Plastics



The Extra SPARKLE SILVET[®] (EST) and Extra SPARKLE SILVEX[®] (ESX) grades were developed to provide aluminum pigments with the potential for creating alluring and novel aesthetics in plastics. This is accomplished by changing the shape of the aluminum pigment from the traditional 2-dimensional “flake” geometry to a 3-dimensional “sphere”.

This new geometry reflects light differently than conventional flake pigments. Traditional aluminum grades have relatively flat surfaces and high surface areas. When aligned parallel to the substrate or polymer surface, they reflect light in a highly angular manner. As a result, the metallic appearance changes noticeably as the viewing angle changes.

Compared to flake pigments, light reflected from spherical aluminum pigments is much less affected by the viewing angle. This minimizes the “flop” effect normally seen with traditional aluminum pigments, and maintains a more uniform color as the viewing angle changes. Since the surface area of a sphere is different than a traditional flake of a comparable particle size, more of the polymer matrix is visible because a greater amount of light is reflected from it than from the metallic pigment. This forms the basis for the visual effects obtainable when using EST and ESX grades.

To maximize the aesthetic value of plastic pigmented with EST and ESX grades, transparent plastics, pigments and dyes are recommended. When EST and ESX grades are used in combination with transparent resins and colorants, a shimmering, 3-dimensional pinpoint sparkle is produced. This effect is generated because light is reflected not only from pigment particles near the surface but also from those lying deeper within the polymer. The overall aesthetics are greatly enhanced when viewed under a bright light source or direct sunlight.

When formulating with EST and ESX grades, it is important to remember the differences between spherical and flake pigments. The low opacity of spherical pigments means that variations in the concentration of metallic pigment or colorant can result in noticeable changes to the aesthetics of the finished part. Therefore, care must be taken to ensure dispersion and loading of the colorant and metallic pigment concentration are tightly controlled. In addition, care must be taken during polymer processing to keep from damaging the spherical pigment particles. As with all aluminum pigments, excess shear may alter the shape of the EST and ESX pigment particles, resulting in noticeable changes in appearance.

Extra SPARKLE SILVET®/SILVEX® Series



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