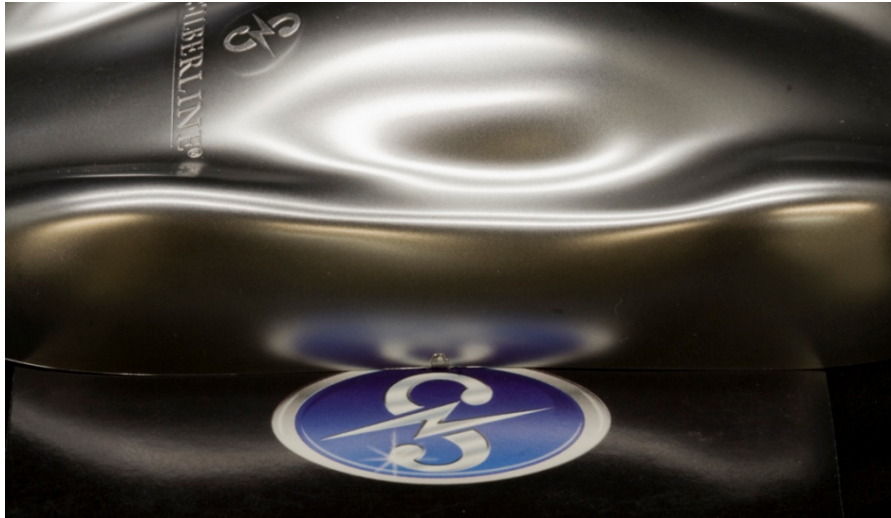




SPARKLE SILVER Elite Liquid Metal (LM)

Milled Aluminum Pigments Achieving Chrome Appearance

By: Steve Serfass, Technical Service Representative - Coatings



SILBERLINE has introduced two new products to our milled aluminum paste offerings, building on the popularity of the 1st generation SPARKLE SILVER Ultra Liquid Metal (LM) series. This new family of products, SPARKLE SILVER Elite Liquid Metal (LM), allow a formulator to use a conventional milled aluminum flake to achieve unique, and dazzling effects. From a high travel, smooth metallic finish, to a near chrome-like, continuous coating, SPARKLE SILVER Elite LM products afford a plethora of coatings effects to the formulator, previously only realized through the use of vacuum metallized aluminum flakes (STARBRITE series).

The products that have been recently introduced are:

1. SPARKLE SILVER Elite 011LM— 11µm silver dollar flake
2. SPARKLE SILVER Elite 015LM— 15µm silver dollar flake

These new products can be formulated for use in a multitude of coatings types, ranging from Automotive OEM, Refinish, Interior & APA, Wheel coatings, 3C, as well as high end general industrial applications.

Due to their excellent hiding/opacity, the SPARKLE SILVER Elite LM products allow the formulator to use a traditional coatings formulation with a lower pigment to binder loading and still achieve full hiding. When formulated this way, an increased metallic travel (flop index) is produced giving a very bright, smooth and clean appearance.

Unlike VMF products, these Elite LM flakes can be used in tinted systems providing very clean color.

Where the SPARKLE SILVER Elite Liquid Metal series pigments truly shine, is they deliver the look and appearance of VMF with the application benefits of conventional aluminum pastes. Currently these new aluminum flakes are optimized for solvent based coatings, however, silica encapsulated (SILBERCOTE AQ) versions of the SPARKLE SILVER Elite LM series are currently in development at SILBERLINE, to add to our current SBC AQ Liquid Metal portfolio. The addition of the thin silica coating permits the use of these pigments in water based systems, inhibiting the aluminum/water reaction, resulting in negligible hydrogen gas generation. An additional benefit of the SBC AQ treatment is the improved shear resistance imparted by the thin silica shell, which is essential to automotive exterior OEM coatings.

Application Tips:

Whether or not you are trying to achieve a smooth silver high metallic travel look or a chrome/mirror look, the best way to apply these products is through an air spray application, using multiple thin coats to provide the best flake orientation.

Basecoat Formulation Guidelines (Solvent Based Mirror Finish):

To achieve a mirror or chrome metal look, we recommend a 1K, low molecular weight, medium hydroxyl thermoplastic acrylic, using a higher pigment to binder (P:B) ratio (minimum 1:1) and lower solids concentration (5% or less). When applying, ensure the substrate is very smooth, clean, and free of defects. It is also beneficial to spray the metallic coating over a substrate that has a smooth glossy black primer – giving a dark chrome effect when applying the aluminum base coat at partial hiding. This look has become especially popular in wheel coating formulations around the globe. It is also essential to test varying levels of pigment loading, to ensure that the coating still has good adhesion along with a chrome finish.

Basecoat Formulation Guidelines (Solvent Based High Metallic Travel Finish):

To achieve a smooth high metallic travel, we recommend a low to medium solids system, such as a high gloss acrylic polyol, using a lower pigment to binder ratio (3-10%). This lower P:B will

allow the flake mobility in the system and allow for optimum orientation. Best results are using multiple thin coats, however the application parameters for this type of metallic coating are not as critical to the final effect.

Topcoat Application Guidelines (Solvent Based Mirror Finish):

Due to the higher than normal P:B necessary to achieve the desired aesthetic, use of a powder coating clear topcoat is the best way to maintain the mirror finish of basecoats containing SPARKLE SILVER Elite LM. This gives the best appearance and mitigates “strike in” to the basecoat that can disrupt flake orientation. If a liquid clear coat is used, careful choice of diluents and solvents is critical to prevent disruption of the aluminum flake orientation. We recommend that the clear top coat is applied in very thin, multiple coats, allowing a longer than normal flash time between coats. Use of “strong” solvents is not recommended.

Topcoat Application Guidelines (Solvent Based High Metallic Travel Finish):

No specific application or formulation specifics are required. Normal topcoat practices are acceptable and no special requirements are necessary to maintain basecoat appearance.

Example coatings formulations are available from your local SILBERLINE technical representative.