colorare
Pigments, Natural Paints & Coatings

TECHNICAL SHEET

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ANTIQUE SILVER PEARL

Chemical Nature

Anatase TiO2 coated mica flakes with titanium dioxide and iron oxide. A grey, free flowing powder with pearly luster.

Mearlin® effect pigments produce exceptional finishes of unusual beauty for plastics, industrial coatings, inks, and other applications.

These pigments permit formulators to control the texture of the systems. They also make it possible to create light shades with high-color purity and excellent coverage.

Anatase TiO2 coated mica flakes with black iron oxide

Properties

Physical form	Dry Powder	100%
	Density	3.1 g/ml
	Bulk Density	~ 10.0 lbs/ft³
	pH (4% aqueous suspension)	6.0 – 10.5
Physical data	Particle Size Range	95% of platelets are between 6 - 90 µm in length by light scattering measurement.
	Mean Particle Size	26 µm

Application

Antique Silver is used in the following applications:

- Coloration of Plastics
- Powder Coatings
- General Industrial
- Architectural / Deco
- Specialties
- Printing Ink

Proper alignment of effect pigments within any medium is recommended to obtain the anticipated appearance. Poor orientation usually yields undesirable appearances. As a general rule, the luster of an effect shade will not be improved by increasing the concentration of the effect pigment. High luster is normally achieved using effect pigments with a particle size of 10-15 microns at a 10-15% loading. Due to light scattering effects, a decrease in particle size tends to lower the luster for the coating.

Color styling with transparent interference effect pigments is additive but will be adversely diminished with absorptive effect pigments or scattering classical pigments. Due to the transparency of mica based effect pigments, absorption of the transmission color with either dark substrates or absorption pigments is necessary. Light or white backgrounds will reflect the transmission color at aspecular angles only. Because effect pigments use absorption, transmission and reflection, scattering pigments such as inorganic pigments tend to impair the effect.

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Plastics

As with all effect pigments the amount of material used is primarily dependant upon the look that you are trying to achieve with the final part. The recommended final loading is 1% - 3%. Concentrates can be made as high as 30%. The dispersion of the pigment requires low shear to avoid fracturing of the mica substrate. Generally a single screw or non aggressive twin screw configuration is recommended. Subjecting the mica to high shear forces will reduce the luster of the final product. In some cases the effect pigment can be placed directly into the molding machine prior to final part production skipping the extrusion process.

Printing Inks

Special effect pigments are shear sensitive. They should be dispersed without excessive milling or shear to avoid fragmented platelets and stripped refractive coatings. If the dispersion becomes warm, it is under too much shear and indicates that either pigment loading or mixing speed should be reduced.

For best results, mix the vehicle, colors and additives before adding special effect pigments. They usually disperse these pigments using a low-shear propeller mixer or a high-speed disperser (Cowles Dissolver). When forming a concentrate with a propeller mixer, pigment loading usually is kept between 35 and 40 wt. %. In a Cowles Dissolver, pigment loading generally is held below 25 wt. % and blade tip speed below 2,000 fpm. Blade height should be changed during mixing to distribute the material in the dead spot just below the blade.

In gravure printing, effect pigments generally require line screens of 75 to 250 lines/inch and cell depths of 20 to 120 µm. In flexo printing, the anilox cylinders used with these pigments typically have 75 to 250 lines (30 to 98 lines/cm). A 150-line feed roll is often chosen because it allows larger pigments to transfer well to the printing cylinder.

In screen printing of effect pigments depends on pigment particle size and screen mesh size. A manually-operated, 200-mesh (74-micron) screen accommodates most special effect pigments. A typical loading of 10-15% pigment is used.

Coatings

Dispersion of effect pigments is a key for effect pigment performance within a coating. Electrostatic or steric stabilization may be employed to achieve desired formulation stability. Effect pigments may be pre-mixed at 25-35% mica based effect pigment with 65-75% vehicle solids using low shear mixing for 15-30 minutes. This slurry may be then added to the final paint formulation. If settling or hard packing occurs due to relatively high specific gravity of mica effect pigments, a proper formulation using anti-settling agents such as Attagel® 50 or Byk®[1] 410 with circulation may be necessary. It is not recommended to grind effect pigments by using mechanical mills or high speed dispersers.

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State and Local health and safety regulations, thorough ventilation of the workplace, good skin care and wearing of protective goggles.

Material Safety Data Sheet

All safety information is provided in the Material Safety Data Sheet Antique Silver

Storage

Antique Silver has a shelf life of 10 years if stored in original unopened container.

Important

The descriptions, designs, and data contained herein are presented for your guidance only. Because there are many factors under your control which may affect processing or application/use it is necessary for you to make appropriate tests to determine whether the product is suitable for your particular purpose prior to use. **NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, OR DATA MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, DATA OR DESIGNS PROVIDED BE PRESUMED TO BE A PART OF OUR TERMS AND CONDITIONS OF SALE**.