

Pearlescent Pigments

Pearlescent Pigments

The earliest known pearlescent pigment is natural pearlescence, which is a suspension of silvery organic crystals obtained from the scales or skin of fish. However, this material was found to be too fragile for most applications and was eventually replaced by synthetic pearl pigments. Synthetic pearl pigments share with natural pearl essence crystals the characteristics of plate like shape and high refractive index. The major synthetic pearls currently used are Titanium dioxide coated mica and mica coated with other metal oxide such as iron oxide, chromium oxide or bismuth oxychloride.

Such pigments are generally very thin crystalline platelets, which can be readily orientated into parallel layers because of their shape. Being transparent, each crystal reflects only part of the incident light reaching it and transmits the remainder to the crystals below. It is this simultaneous reflection of light from the many microscopic layers that produces the particular kind of shimmery lustre which is known as pearlescence. In addition by controlling the optical thickness of the platelet, certain pearlescent pigments are capable of producing a play of colours by a light interference phenomenon, commonly known as iridescence.

Pearl pigments are produced by deposition of metal oxide hydrate on the mica platelet surfaces which is then calcined at about nine hundred degrees C, to form a crystalline high refractive index layer on both sides of the mica platelet. This calcination provides a very stable, almost inert pigment which will not undergo any further colour change in processing even with extremely high processing temperatures found in some engineering plastics. It also results in pigments that will not bleed, bloom or be soluble in resin systems.

© Copyright Spray Chief