

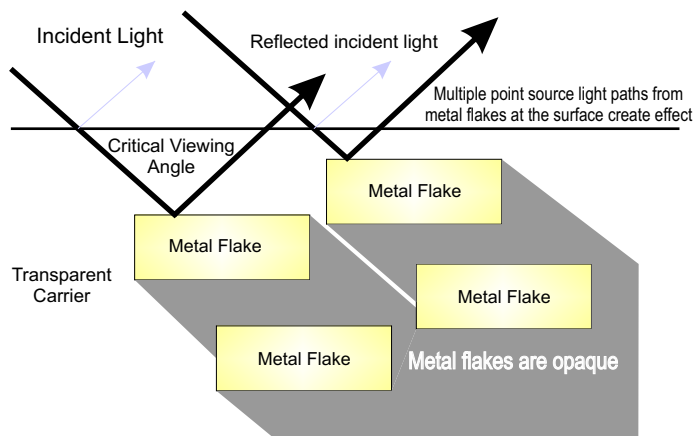
Pearlescent Pigments are different from metal flakes

Before pearlescent pigments the only way to impart a metallic luster into plastics or coatings was to use very fine thin metal flakes so light striking them is reflected from multiple point sources creating a metallic sheen. Metal flakes are opaque so the sheen effect is caused *only* from the platelets found at the surface of the coating.

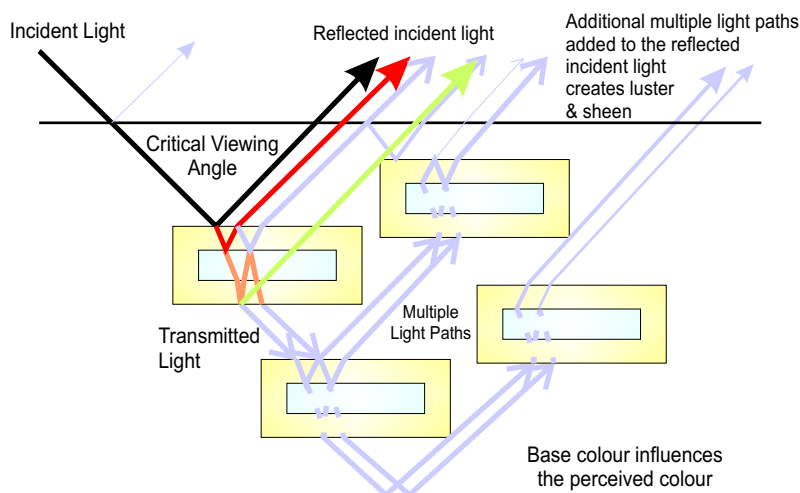
Metal flakes and pearlescent pigments have a similar physical shape - very thin flakes or platelets. However while metal flakes or opaque pearlescent pigments are *transparent* therefore the effect is quite different.

When used in a transparent or semi-transparent coating light penetrates *through* the pearlescent pigments interacting with neighboring platelets causing additional multiple point source reflections and colours not possible with metal flakes.

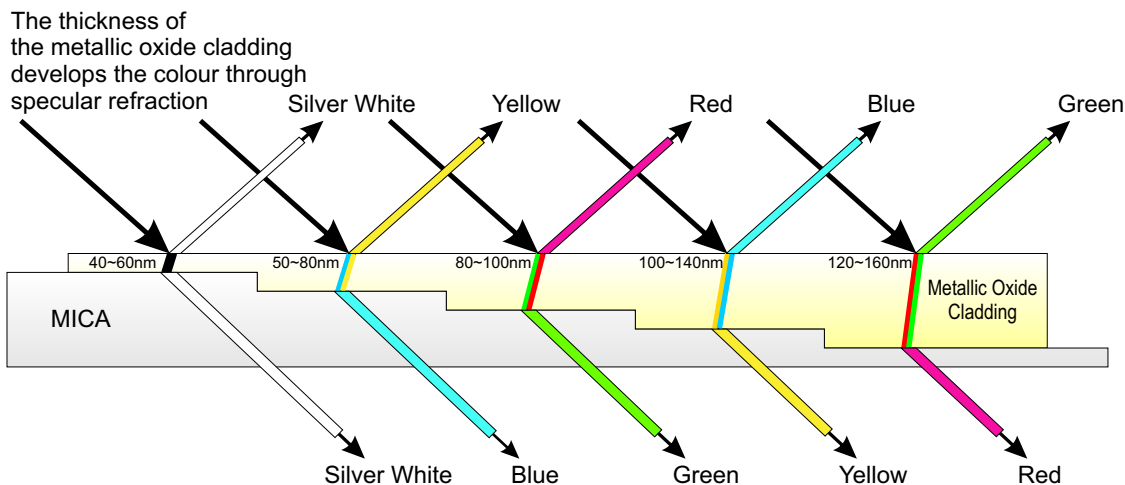
Pearlescent pigments develop colour through interference between light rays reflecting at specular angles from the top and bottom surfaces of the metal-oxide layer. By varying the coating thickness, these colors can be gold, red, blue, or green (see below). The pigments lose color intensity as viewing angle shifts to non-specular angles. In addition, a second color is transmitted through the pigment platelet that is complementary to the reflected one.



Metal Flakes



Pearlescent Pigments



Metallic Oxide Cladding Thickness and resultant colour:
Silver White 40~60nm, Yellow 50~80nm, Red 80~100nm, Blue 100~140nm, Green 120~160nm