DURA

TECHNICAL BRIEF

LOSS-OF-DRY ADDITIVES

Loss-of-dry is often observed in highly pigmented systems, particularly those pigmented with carbon black, toluidine blue, green and red and other such pigments. Although not as common, this phenomenon can also be observed in whites and pastels. Loss-of-dry occurs by irreversible absorption of the active metal driers onto the surface of the pigment, rendering the metal driers inactive for curing of the coating. This phenomenon is typically observed over time and is manifested by a longer cure or dry time with aging of the coating.

DURA Chemicals offers several products to eliminate or minimize this undesirable loss-of-dry phenomenon.

Duroct® Calcium 10% can be used as "sacrificial" driers by addition into the grind. The calcium will be absorbed by the pigment and the active cobalt, zirconium and other metallic driers which are post-added will then be available for cure.

Duroct® Cobalt 21 is the most common "feeder drier". The product is a dispersion of insoluble Cobalt Hydroxide in Cobalt Neodecanoate as the carrier. The product functions by slowly "feeding" cobalt, which is being solubilized by dissolution of the Cobalt Hydroxide into the organics in the coating, to replace the cobalt which is slowly being absorbed by the pigment. Addition of the appropriate amount of **Duroct® Cobalt 21** should result in minimum loss-of-dry.

Durastab® LF is a lead-free feeder drier containing a blend of cobalt, calcium and zinc, all in soluble form as metal organics. This 'feeder drier" can be added to the grind or post-added and is used in addition to the drier package formulated to provide the dry-time performance and film properties desired.

XL-Dri® can also be considered as a loss-of-dry additive in addition to its function as a drier accelerator for the cobalt, manganese and vanadium oxidative driers. Complexation of these metal driers renders the driers less prone to absorption onto the pigment, thus keeping them active in the coating. In addition, in waterborne systems, complexation of the oxidative driers minimizes drier hydrolysis, another mechanism of drier inactivation.

***DURA Chemicals** offers the technical service to assist in the use of these loss-of-dry additives.*

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