

TECHNICAL BULLETIN #12

AQUEOUS COATINGS

Aqueous or water based coatings are extremely popular in the graphic arts industry due to advantages over conventional overprint varnishes. Aqueous based coatings are based on water/amine soluble acrylic resin technology; they dry principally by evaporation of water and amine. These coatings are very commonly used in the folding carton and commercial printing industries as an alternative to oleoresinous overprint varnishes.

The interaction of the coating, both in its wet and dry state, with the ink components is crucial to the development of optimum properties with minimal problems. The ink components should be chemically compatible with the coatings so that pigment bleed or disruption of the ink film integrity does not occur. These amines are aggressive with some pigments and a potential issue is pigment "bleed" or color shift

Reflex Blue, Purple, Rhodamine, and Violet pigments are the most sensitive pigments to color bleeding. Non-porous substrates such as styrene, papers that have high "hold out", and coating two sides exacerbate the problem. In most cases, the "bleed" will take a number of hours to occur, due to the gradual build up of amine and/or alcohol vapors in the pile, so the fact that a sheet looks good right off the press doesn't mean that it will be ok.

High ammonia or amine vapor concentrations can also cause a higher than normal degree of yellowing in the vehicle or varnish portion of the ink. This may be a factor in very light colored tints that have very small amounts of color in them. A tint color may appear to get yellower.

We have a laboratory test that closely simulates high vapor concentration and can be used to predict potential problem combinations of ink and coating; but as with any laboratory test, it cannot cover all possible circumstances. Pre-testing unknown coating and ink combinations under actual conditions is strongly recommended.

Recommended spot color inks for use with coatings:

Braden Sutphin's Earth Pride UV Coatable