

THE NEED FOR INK ADDITIVES

A great amount of time and care is taken by all ink manufacturers when developing their printing inks. These inks are balanced to perform under a variety of conditions, but it is difficult to make one ink that is capable of running on all presses and all substrates. We, therefore, supply a group of additives to help the pressman adjust the ink for a specific stock or press condition.

Sheetfed lithographic printing inks usually contain driers at a level that insures that the ink will form a hard film in a predetermined amount of time under normal conditions. This is usually a blend of cobalt for fast top dry and maganese for a more stable bottom dry. Conditions that may cause the driers to perform poorly are stocks that are cold and damp, too much fountain solution in the ink and poor air circulation in the pile. Excessive driers in an ink, on the other hand, can cause gas-ghosting and/or poor trapping.

Driers

Cobalt (D 2) has an outstanding ability to accelerate the drying reaction, as it is a strong oxidizer. Cobalt drier can be added at a level of 0.5 - 1%, but additions should be carefully controlled to avoid gas-ghosting and/or poor trapping.

Maganese (D 1) is also an active drier. It is fairly potent as an oxidizer and it promotes polymerization to a greater degree than cobalt. Maganese drier can be added at a level of 1 - 2% and is not as likely to cause the same problems as cobalt can.

Combination driers (D 9) are a 50/50% blend of cobalt and maganese driers. It can be added at a level of 1 - 3% to yield the benefits from both types of driers.

Combination driers MCZ (D 24) blends Maganese, Cobalt and Zinc. The addition of Zinc to this combination increases the final dried film hardness. Add at levels of 1 - 3%.

Paste Combination driers (M 5405) are a 50/50% blend of cobalt and maganese driers that have been jelled. Not only does this help to mix the driers into the ink in the ink fountain, but it also retains the body of the ink.

PHD (Paste Hard Dry) Compound driers (D 19) are a unique blend of wax and driers. When added at levels from 4 - 7%, PHD Compound driers will help promote better slip and rub-resistance of the ink. This is ideal for matte stocks as well as other stocks that have less than desired scuff properties.

Aqua Drier (D 33) speeds up the drying time from within the ink. It reacts with the water that the ink takes up and produces oxygen. It is a press-side additive and should be used at a level of 2 - 3%.

Ink Drying Stimulator (U319-4L) is an aqueous cobalt drier that is added directly to the fountain solution. It is suited to be used with non-porous or other hard-to-dry substrates and is easier to add than other "ink" type driers. Add 1 - 2 oz per gallon of working fountain solution.

The press-side addition of drier will not necessarily improve the rub-resistance of a printing ink and, in fact, excess drier will cause poor rub properties.

Tack Reducers

Jelled Tack Reducer (S 44) is a jelled linseed oil that is used to reduce the tack and maintain the gloss and body of an ink. Use at a 1 - 2% rate.

Paste Tack Reducer (M 170) is a tack reducing solvent that has been made into a paste for ease of mixing into the ink. It should not be used in oxidizing inks. Use at a 1 - 2% rate.

Liquid Tack Reducer (S 5, S 510) is a blend of solvent and linseed oil that is designed to give effective tack reduction while maintaining the oxidizable content of the ink. Use at a 1 - 2% rate.

Compounds

Body Gum (V 88) is a heavy bodied, gloss varnish to add tack, body and gloss to an ink. Body Gum will also improve other lithographic properties, like water-resistance to prevent ink emulsification. Body Gum will also help reduce print chaulking, plate scumming and roller stripping. Use at a 1 - 3% rate.

Non-Piling Ink Additive (S 42) can be added to the ink at press-side to help control piling. It will reduce the body and tack of the ink and may slow the drying time. Use at a 1 - 2% rate, maximum.

N.P.A. Plus is an aqueous non-piling additive added directly into the fountain solution. Add 1.5 - 3 oz per gallon of working fountain solution for light piling, 3 - 6 oz for moderate piling and 6 - 9 oz for heavy piling.

Inhibitor (I 6) is a specialty compound inhibitor. A few drops on the edge of the roller train will control edge drying of the inks. It is designed to slow the function of the driers and over-additions will poison the drier effect altogether.

All additives must be used with great care, as they alter the ink. They can reduce the strength, and lower the tack/decrease the body when it is not desired. These results can lead to new problems with the printed job.