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environment



Pick Out The Truths About Soybean Inks

by Troy Philis

The recent widespread public concern with the environment and ever increasing environmental regulation has had a great effect on the printing industry. Recycled paper, low alcohol fountain solutions, low VOC inks and press washes, and now soybean inks are all forcing printers to change the way they do their jobs in order to achieve the same quality and turnaround

time for their customers.

What Is A Soy Ink?

Any ink containing soy oil (oil derived from soybeans) might be called a soy ink by its manufacturer. One ink company might include just a drop of soy oil in its soy ink formulation, while another might use soy oil exclusively in its formulation. If an ink displays the American Soybean Association's Certification seal you can be assured that the ink contains at least the suggested minimum percentages of soy oil recommended by the Association (these are 55 percent for news ink, 20 percent for sheetfed, 18 percent for heatset ink and 40 percent for forms ink).

What's So Special About Soy Oil?

Soy oil is a vegetable oil. It is not very volatile, so when it is used in place of petroleum oil, it lowers the VOC (volatile organic compound) content of the ink making. It is easier for the printer to comply with air quality regulations.

When soy oil is used in place of petroleum derived oils in news ink, in most cases the result is an ink with better press performance and a better looking print. Less rub-off has also been observed.

In heatset and sheetfed inks soy oil is not as great an asset. Heatset inks set by forced evaporation of the solvent (oil) from the ink film. Even low percentages of soy oil (which is not very volatile) incor-

porated in a heatset ink have a detrimental effect on the drying of the print.

Almost all sheetfed inks are already formulated with a certain percentage of vegetable oil. These oils (namely linseed oil and chinawood oil) have much better drying properties than does soy oil. So, when soy oil is used in place of linseed or chinawood oil the resulting ink is usually slower drying and has poorer rub characteristics.

Soy oil can be used in place of the petroleum oil portion of a sheetfed ink, making the ink "high solids," but using linseed or chinawood oil in the same way would still give a better drying ink.

The price of a soy ink is dependent on its formulation. If soy oil is used to completely replace the less expensive petroleum derived oil in an ink formulation, the resulting soy ink could be 10 to 20 percent more expensive than its "conventional" counterpart. If the soy oil completely replaces a more expensive vegetable oil like linseed oil or chinawood oil, the soy ink formulation could be 10 to 20 percent less expensive. In practice, however, most soy inks do not contain enough soy oil to affect the price that greatly. In fact the price of most soy inks currently on the market falls within a few cents per pound of their "conventional" cousins.

The hidden costs of a sheetfed and heatset soy ink is the loss of setting and drying

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properties that occur from the addition of soy oil into the formulation. A decrease of drying and set speed can result in slower turnaround time, more waste due to offsetting, printed material with less rub resistance, and a variety of other factors that work to increase the real cost of a job.

Therefore, in some cases by ordering a soy ink you can be doing both yourself and the environmental a favor; in others you may not be making the best choice available. Only better knowledge of each individual printing process, and the inks they use, can help you make the right choice. ♦

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