



Tech Talk #18

ALCOHOL REDUCTION

In The United States, governmental legislation and environmental pressures over the past twenty-five years resulted in virtually all web and sheetfed printers eliminating alcohol from their pressrooms.

Outside the United States, however, these legislative pressures do not yet exist, and there is still widespread use of alcohol in offset pressrooms, particularly sheetfed. Despite the lack of regulatory pressures there are still a number of very compelling reasons for reducing or eliminating the use of alcohol:

- **Cost reasons** - depending on the market price for alcohol, the savings from its reduction or elimination can be substantial. Alcohol evaporates quickly and requires regular replenishment to maintain a constant level; actual purchases are frequently higher than what would be indicated by the nominal usage level
- **Safety** - Isopropanol is flammable with a flashpoint of 12° C which means that proper handling and storage are key safety issues
- **Toxicity** - Isopropanol is very toxic; the legal limit in the US, for instance, is 400 ppm, a level easily reached in the average pressroom
- **Insurance** - Eliminating the storage and use of isopropanol may result in reduced insurance premiums
- **Print Quality** - Eliminating isopropanol results in sharper dots, brighter colors and higher printed gloss at lower ink and water settings
- **Environmental** - Isopropanol is potentially the largest single contributor to organic air pollution in the pressroom.

Over the years, sheetfed offset printers outside the US have attempted to reduce or eliminate the use of isopropanol with varying degrees of success using fountain concentrates that were really not capable of allowing them to do so. Many of these printers had bad experiences and encountered high water metering speeds, slow drying times and narrow windows along with scumming, tinting and toning. They have expressed to us a reluctance to attempt the process again while realizing that eventually governmental regulations will force them to do so.

Meanwhile in the US fountain concentrate development continued and the process of eliminating alcohol was perfected (see our Tech Talk #10). Throughout this period Printers' Service, a leading US manufacturer of web and sheetfed offset fountain concentrates and alcohol substitute-type products, conducted extensive research and field testing.

The result was a series of user-friendly alcohol-eliminating products available under the **Prisco** trademark that exhibit superior pressroom performance - wide operating window, low water metering speeds and excellent print quality - combined with the other benefits of alcohol elimination that are listed above.

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Sheetfed offset printers that are reluctant to attempt complete alcohol elimination can now use these same **Prisco** products to reduce their alcohol percentage from its present level - generally 8 to 12% - to 5% or less while making virtually no changes to their existing rollers, stripe settings and ink and water metering speed settings.

How is this possible, when other products tried in the past have failed? Recent advances in fountain concentrate formulating technology - pioneered by Printers' Service - have resulted in products that are more efficient at desensitizing the non-image area of the plate while providing superior wetting and more buffer capacity versus older-style products. These advanced properties, built into all recent **Prisco** fountain concentrates, mean that **Prisco** fountain concentrates require far less alcohol than older-style products do to provide you with the performance you expect out of your fountain concentrate. In fact, they perform best when the measured alcohol level in your reservoir is at a level of 5% or less.

Interested? Then let's look at the few simple steps required to convert your current high-alcohol sheetfed press to one that uses 5% or less:

- Drain existing fountain solution from reservoir and fountain pans. Wipe reservoir clean, clean out system (if necessary) with **Prisco Royal Flush**® and replace all filters.
- Refill reservoir with designated **Prisco** fountain concentrate at the appropriate percentage. Your local **Prisco** representative or distributor can help you do this.
- Reset alcohol metering equipment to a level of 3 to 5%, appropriate to the press (your local **Prisco** representative or distributor can provide guidance) and restart the reservoir pumps.
- At this point we recommend removing as much as possible of the previous ink from the rollers either by "sheeting off" or by washing up the roller train.
- Restart press, reducing ink settings to the minimum necessary to achieve the required density.
- Adjust water metering speeds to a level consistent with the new ink settings.

That's all there is to it! Occasionally adjustments to roller stripes may be needed to compensate for the slight reduction in mixed fountain solution viscosity due to the reduced level of alcohol, but no other changes should be necessary.

After getting a chance to evaluate the performance of your **Prisco** fountain concentrate at a reduced alcohol level, you will be ready to take the next logical step, which is complete elimination of alcohol. This generally involves replacing the alcohol with the appropriate **Prisco** Alkaless alcohol substitute along with added attention to ink, rollers and roller settings, following steps outlined in our **Tech Talk #10**. Your local **Prisco** representative or distributor can help you do this.

As always, your local PRINTERS' SERVICE office is happy to answer your questions:

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