US Ink®

A Division of Sun Chemical Corporation

High Strength Inks

Volume *XXIX*

US Ink and its predecessor companies have been manufacturing offset news inks significantly above standard Newspaper Association AD-LITHO strength for more than twenty years. These inks have been supplied to a limited number of customers to overcome particular mechanical problems or print quality defects.

Any textbook on Lithography will tell you that the Lithographic process is optimized by running minimum films of ink and fountain solution. Clearly, one route to achieving this, and yet obtaining good print density, is to utilize higher strength inks. Such inks have been shown to produce cleaner and brighter print with less set-off in the folder and through the mailroom and reduced build-up on the press idler rollers and angle bars.

NEWSPAPER ASSOCIATION of AMERICA SPECIFIES ADLITHO INKS

- COLOR INKS ONLY
- SPECTROPHOTOMETRIC PARAMETERS
- STRENGTH WITHIN ±7% of standard
- SPECIFIES CHEMISTRY for HEALTH and SAFETY

With all of these advantages to high strength inks and their established availability, why are they not major volume products within our industry? Historically, there were two factors inhibiting widespread adoption. Originally, the newspaper association AD-LITHO standards did not recognize the high strength approach. If an ink was outside the normal plus or minus 7% AD-LITHO strength tolerance it could not be called an AD-LITHO ink, even if it complied with all other shade and safety specifications established by the Newspaper Association. The other major roadblock to adoption of high strength inks has always been the cost of the ink.

In color inks, the major raw material cost factor is the organic color pigment. Consequently, if the level of pigment is significantly increased to produce increased strength inks, there is a very substantial increase in the cost per pound of the ink. This is such a major factor that it has to be passed on in the price that the customer pays.

1987--NAA ESABLISHES ADLITHO PLUS

- COLOR SAME as ADLITHO
- STRENGTH 10% OR MORE OVER ADLITHO

With the introduction of the Volume 7 Color Book by the Newspaper Association in 1987, the potential benefit of stronger inks was

recognized by that body for the first time. They established an AD-LITHO PLUS designation for inks that were a minimum of 10% stronger than the AD-LITHO standards. This made it possible for inks that were as much as 40% or 50% stronger but the same shade as the Newspaper Association standards to be specified within the AD-LITHO system.

This change in policy left the per pound price of the ink as the major inhibitor to a more widespread use of high strength inks. Where the inks have been used with significant technical benefit, it has been because the customer was prepared to undertake a long-term study of the true cost impact. This could only be done by looking at the total cost of color ink purchases over a sufficiently long period to eliminate day-to-day fluctuation in color coverage in the paper.

IMPORTANT CONSIDERATIONS WHEN USING ADLITHO PLUS INKS

- NEWSPRINT QUALITY
- PRICE
- DENSITY CONTROL
- DIRECT PRINTING

WHY SHOULD I CONSIDER USING ADLITHO PLUS/SPECTRA INKS?

- BETTER MILEAGE
- LESS PAGE-TO-PAGE SET-OFF
- REDUCED DAMPENING
- BETTER TRAPS
- LESS FAN-OUT
- LESS DOT GAIN
- BETTER PRINT CONTRAST

A limited number of our customers have conducted such studies and found that the additional per pound price of the ink is at least off-set by the reduction in the number of pounds of ink consumed. Of course, this only happens if the pressroom carefully regulates ink usage by means of rigorous densitometer control. Some of the benefits to using higher pigmented ink would be less set off, reduced ink and fountain solution volumes, better trapping and less fan out.

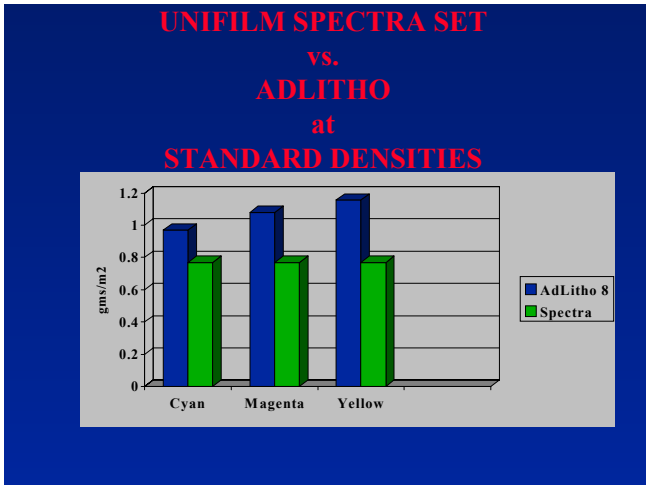
US Ink's approach to the high strength ink concept was to take a scientific look at how the AD-LITHO inks are applied during the printing process. It was found that the current AD-LITHO inks required different film weights to achieve standard printing densities. Thus, the development of US Ink's Spectra Unifilm colors were designed to provide a uniform ink

SPECTRA UNIFILM SET

- INK FILM is SET EQUAL for ALL COLORS
- INK PIGMENTATION is INCREASED as REQUIRED to ACHIEVE DESIRED PRINT DENSITY for INK FILM

film weight between the process colors.

The Spectra Colors have been increased by disproportionate levels to achieve this unifilm approach. The Cyan was increased by 25%, Magenta by 40%, and the Yellow by 52%. As can be seen in the chart, standard printing densities can be achieved with a consistent film thickness. This allows for better trapping of the colors, which can help to increase the color gamut in the printing process.



Unfortunately, not too many printers have been prepared to invest all the time and effort required to really establish the benefits and true costs of running high strength inks. Therefore, if one is to switch to these stronger inks, careful density control must be observed to yield any benefits.