

# SunChemical®

a member of the DIC group



## Ink Properties for Press Performance

09/09/2017

**working for you.**

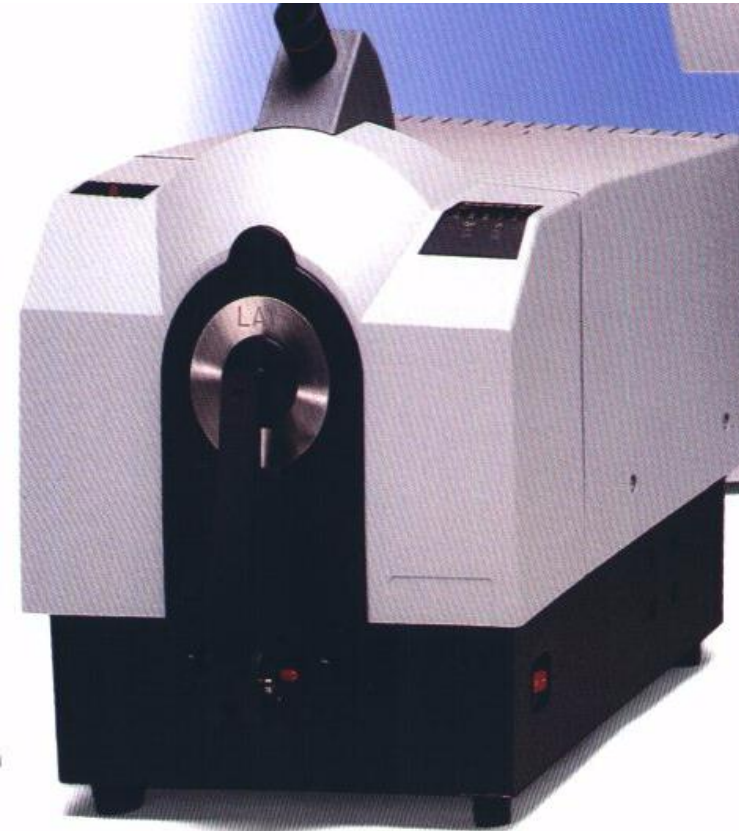


# Ink Properties That Impact Press Performance

- Ink Strength
- Emulsification Characteristics
- Body or Flow
  - Ink Handling System
  - Injector or Open Fountain
- Tack
  - Ink Transfer Characteristics



# Ink Strength



Color Computer Measures Shade and Strength



# Standard Specifications for Ink on Press

## Production Printing Specifications

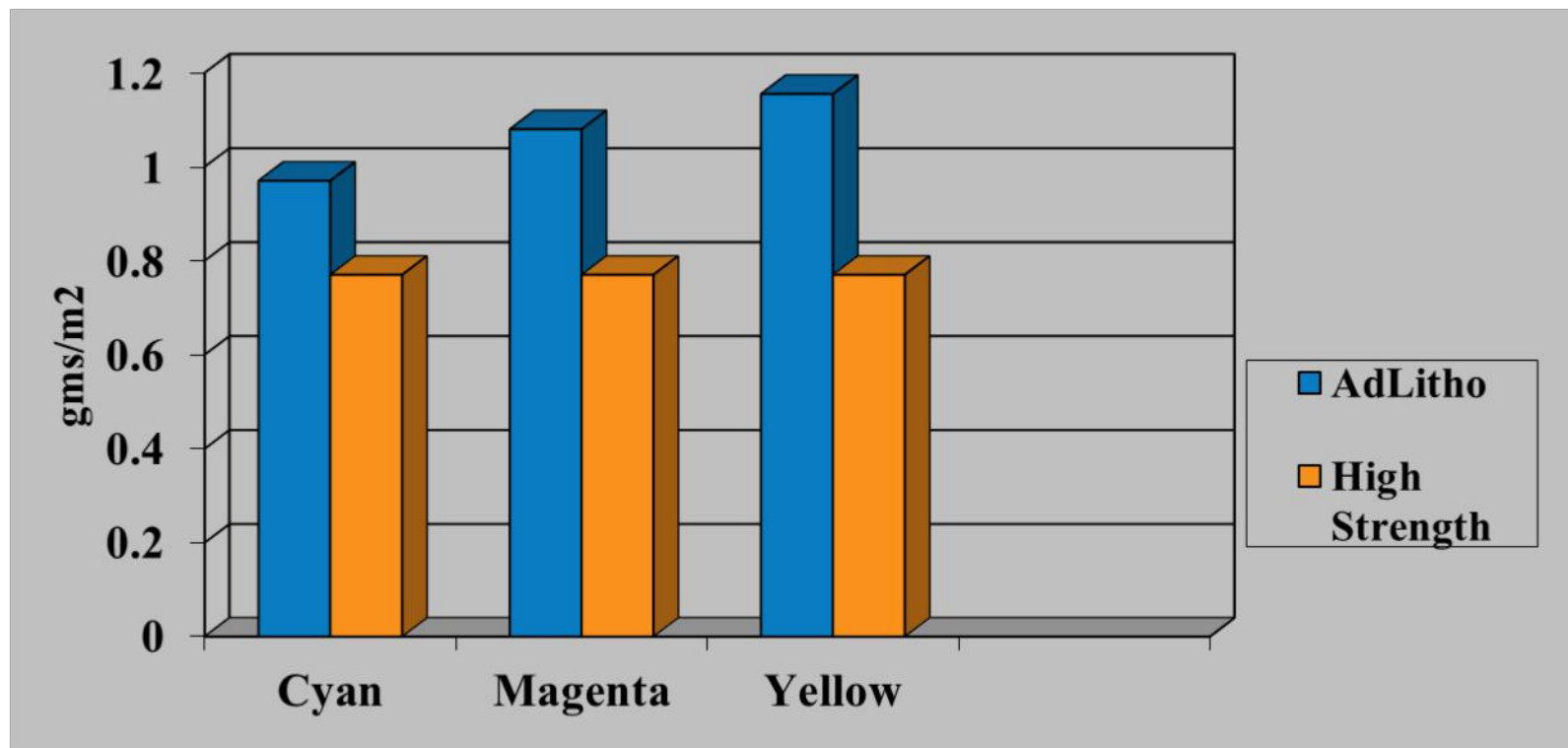
<i>Solid Ink Density (Dry)</i>	<i>Offset Newspaper</i>	<i>Offset Commercial</i>	<i>Flexography</i>	<i>Letterpress</i>
<b>Cyan</b>	0.90	0.90	0.95	0.90
<b>Magenta</b>	0.90	0.90	0.97	0.90
<b>Yellow</b>	0.85	0.90	0.79	0.85
<b>Black</b>	1.05	1.10	1.05	1.00
<b>SNAP Tolerances</b>	+/- 0.05	+/- 0.10	+/- 0.04	+/- 0.05
<b>CIELAB L*, a*, b* Aim Values</b>		<b>L*</b>	<b>a*</b>	<b>b*</b>
<b>Cyan</b>		57	-23	-27
<b>Magenta</b>		53	48	0
<b>Yellow</b>		79	-5	60
<b>Black</b>		40	1	4
<b>Cyan &amp; Yellow</b>		53	-34	18
<b>Cyan &amp; Magenta</b>		41	7	-22
<b>Magenta &amp; Yellow</b>		52	41	25

Values come from ISO 12647-3. They represent offset and letterpress inks only. Measurements are according to ISO 13655 (2° observer, illuminant D<sub>50</sub>, 45°/0° or 0°/45°, black backing).

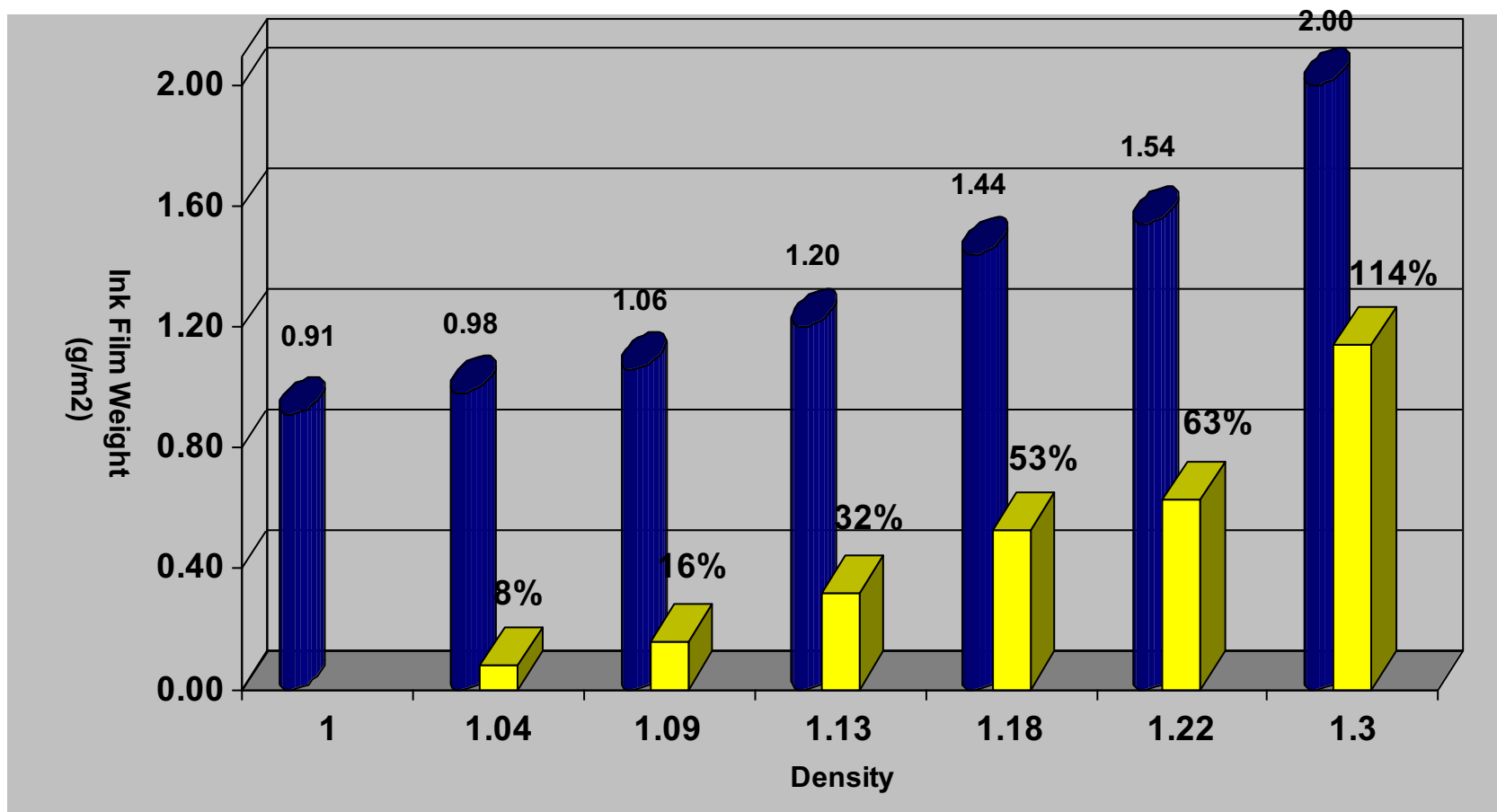


quantity.  
service.  
innovation.

# INK FILM AT STANDARD DENSITIES



# Ink Consumption vs. Print Density



# Variables That Impact Ink/Water Balance

- Plates
  - CtP
  - Chem Free Plates
  - Direct to press plates
- Paper
  - Lighter weight papers
- Ink
  - General industry change to AdLitho strength inks from High Strength Inks
- Fountain Solution

**All of the consumables need to be in balance on press.  
Changing one may impact the others**



- So how do you test on press?





# Press Testing Steps

- **PRE-SETTING**

- Test : Ink Pre-setting

- **REPEATABILITY**

- Test Density Repeatability

- **STABILITY**

- Test Density Stability and Accuracy at production Speed

- Test Density Stability on Press Acceleration

- **DOT GAIN**

- Test Dot Gain



## Ink/Water Curve Optimization Form



Use this form for 41" web widths

The diagram shows a vertical stack of four color bands: Cyan (top), Magenta, Yellow, and Black (bottom). Each band contains a horizontal row of white circles representing registration marks. The bands are flanked by vertical registration lines on both sides. Below the bands is a table with the following data:

CYAN	= 0.90 +/- 0.05
MAGENTA	= 0.90 +/- 0.05
YELLOW	= 0.85 +/- 0.05
BLACK	= 1.05 +/- 0.05



# Steps to Setting Ink/Water

- Start test form at preset values
- At Start up speed: Adjust ink and water to minimum ink and water
  - Note any changes to ink and water settings
- Increase press speed through the range of normal running conditions
- Check ink and water at various points through the speed increase
  - Again note any changes in ink or water



# Ink Curves



After changing ink/water curves they should be verified on press and multiple units



# Dot Gain



# Impact of Dot Loss



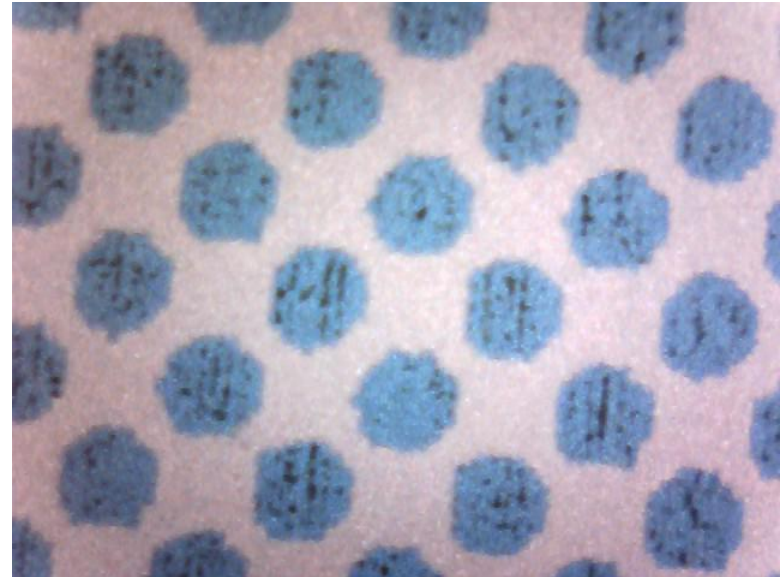
- Typically related to Violet Plate Technology
  - Dot reduces size in the first 1000 impressions







New 50% measures 51%



Used 50% measures 43%



## Solid Ink Density vs. Dot Gain

Dot Gain	25%	21%	19%
50% Tone Density	.62	.58	.57
Solid Ink Density	.90	.90	.90
Dot Gain	25%	21%	19%
50% Tone Density	.62	.62	.62
Solid Ink Density	.90	1.0	1.1



# Benefits of These Steps

- Today's press runs are typically shorter with less time to adjust during the runs
- Presets more consistent
  - Faster Start ups
  - Lower Waste
- Runs more Consistent
- Less Advertising Complaints





**Thank You!**