

Chromatic Technologies, Inc.

Special Effect Inks for Metal
Decorating

Background

- CTI
 - Company History
 - Company Focus
 - Capabilities
 - Competitive Advantages
- 

CTI



Company History



Company Focus



Capabilities



Competitive Advantages



Overview

- What are Interactive Colors?
 - Effect pigments or dyes that react to their environments.
- Specialty inks on Cans

Thermochromic Materials

- Encapsulated leuco dyes
- Phase Change
- Capsule Wall
- Other thermochromic compounds

Encapsulated Dye

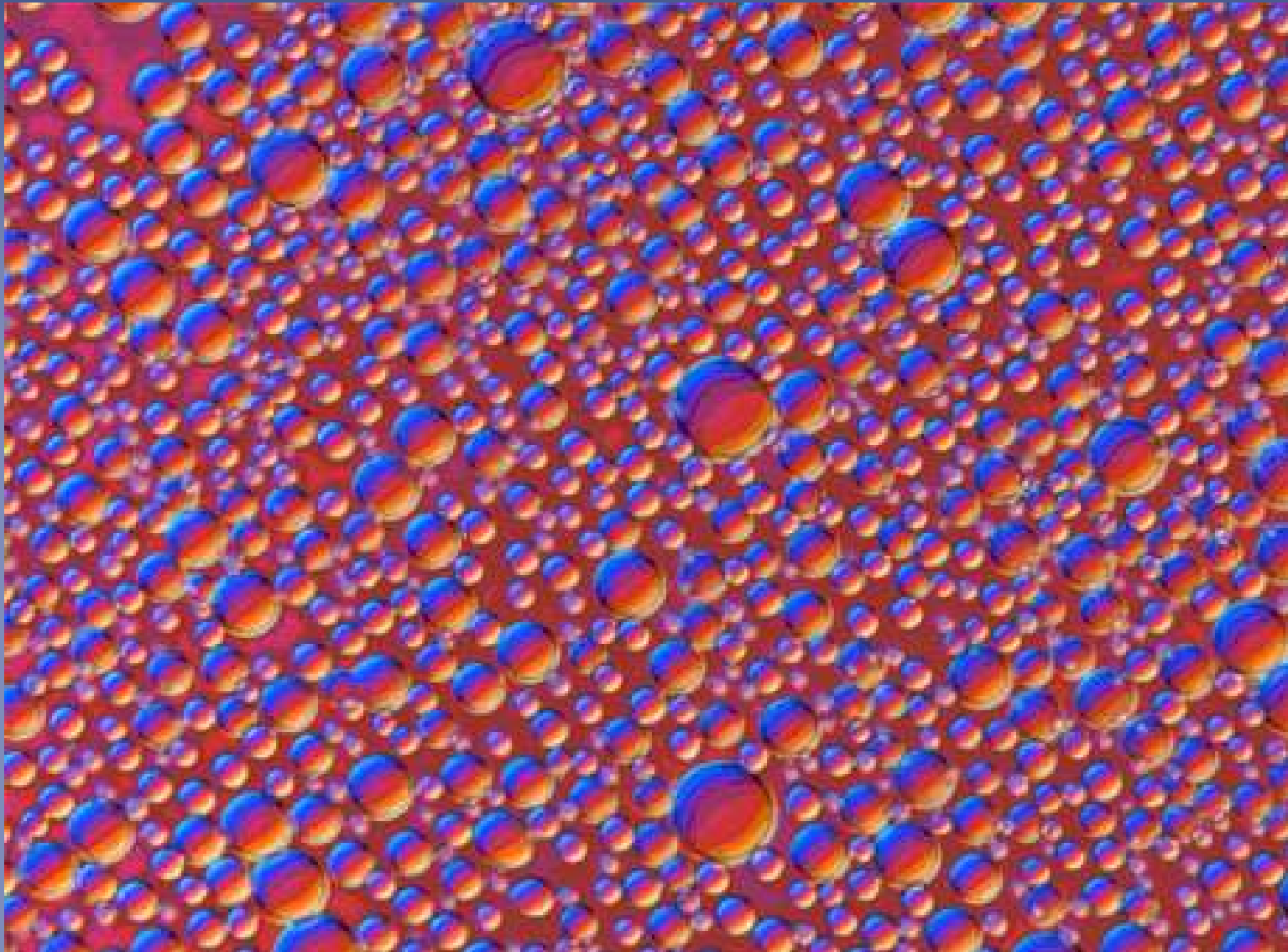
- Carbonless Paper
- Basic Chemistry
- Color Options

Internal Phase

How do they work?

- Fats
- Melting points
- Adjusting transition temperature
 - Color transition can be set to within +/- 2 C
- Other Additives

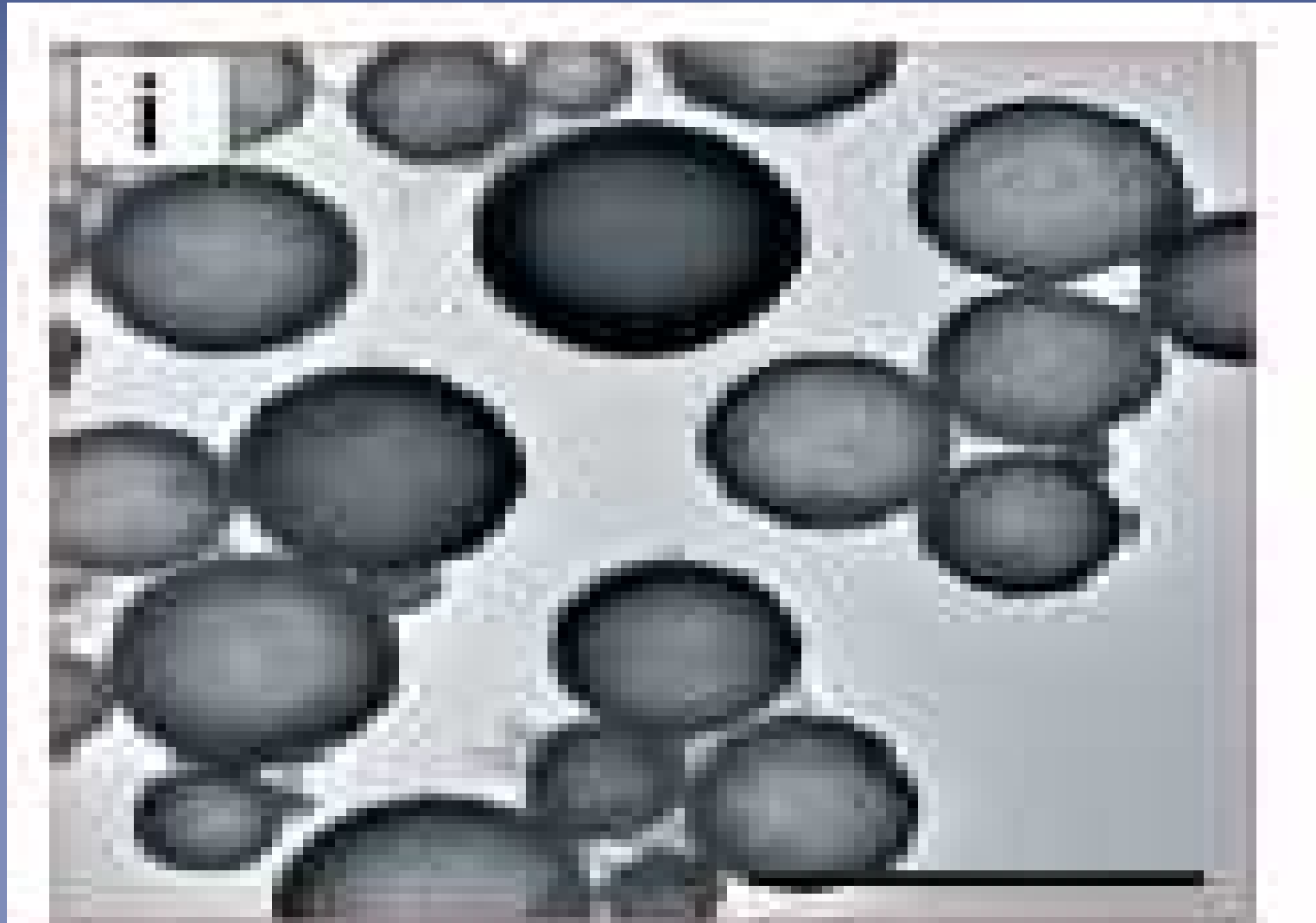
Emulsions



Capsules



More Capsules

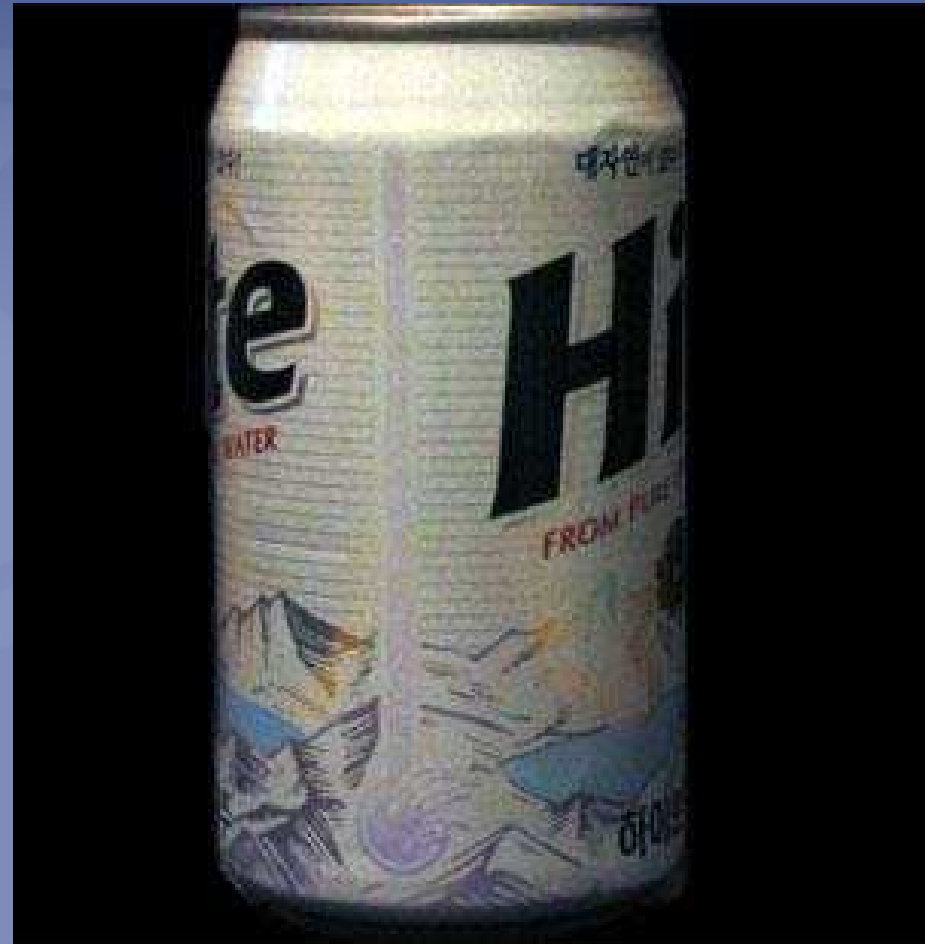


Capsule Wall

- Purpose
- Size Distribution
- Melamine Resin
- Residual Formaldehyde

Application on Cans

- First Commercial Job circa 2000
 - Korean Beer Can
- Temperature indicators



KOREAN BEER CAN. 15 C BLUE AT 1200 CPM



COLD STATE OF HIDDEN MESSAGE TECHNIQUE



WARM STATE OF HIDDEN MESSAGE TECHNIQUE

Variables

- Misting
- Color Intensity
- Coating Weight
- Run Speed
- Print Quality

Misting

- Causes
- Remedies
- Proportional to Coating Weight
- Technical Developments
- Latest Test results

Color Intensity

- Dye Concentration in capsule
- Capsule concentration in ink.
- Coating weight
- Print Laydown

Coating weight

- Basic Issue
- Achieving greater coating weights
- Limitations of the Ink
- Limitations of the Press

Run Speed

- Initial tests
- Present projects
- Latest Test results
- The next step

Print Quality

- Mottling
 - Slinging
 - Scuffing
 - Dry Times
 - Color loss on drying
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Color Loss in Cure

25 C

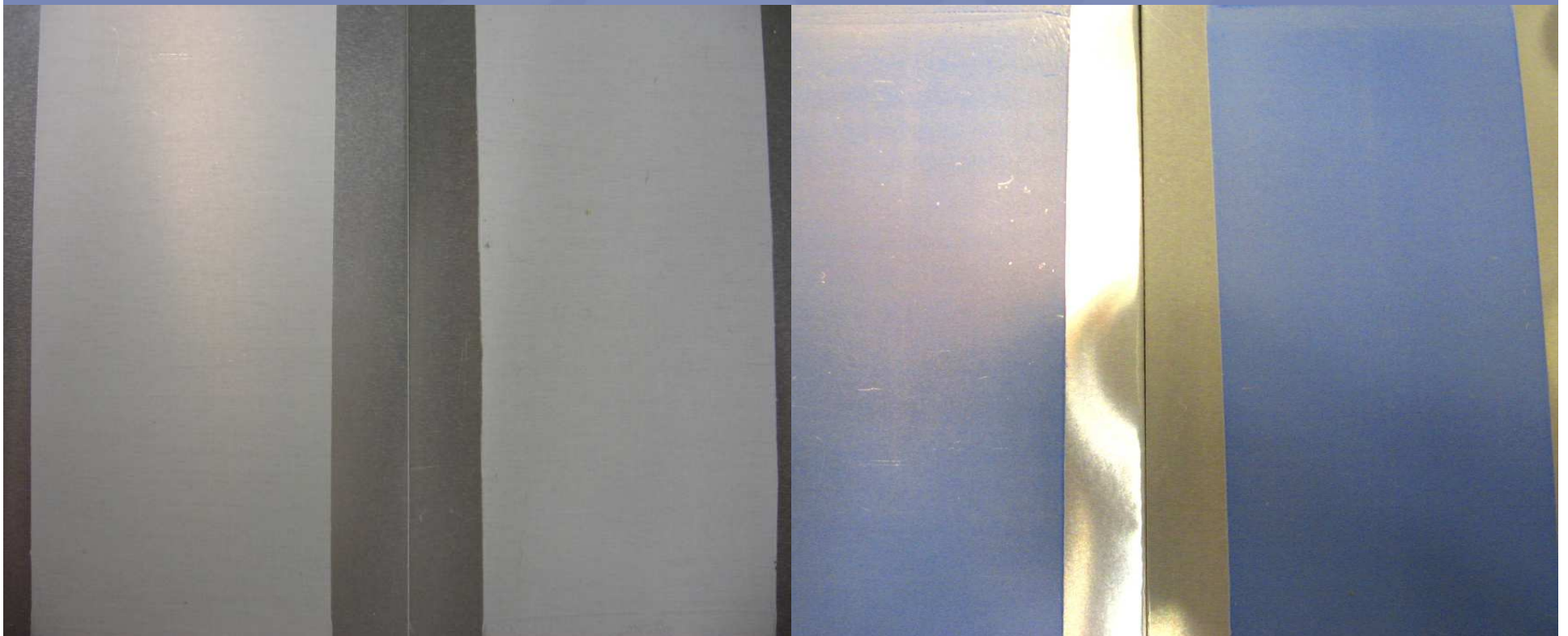
7 C

cured

uncured

cured

uncured



The latest work on Stability

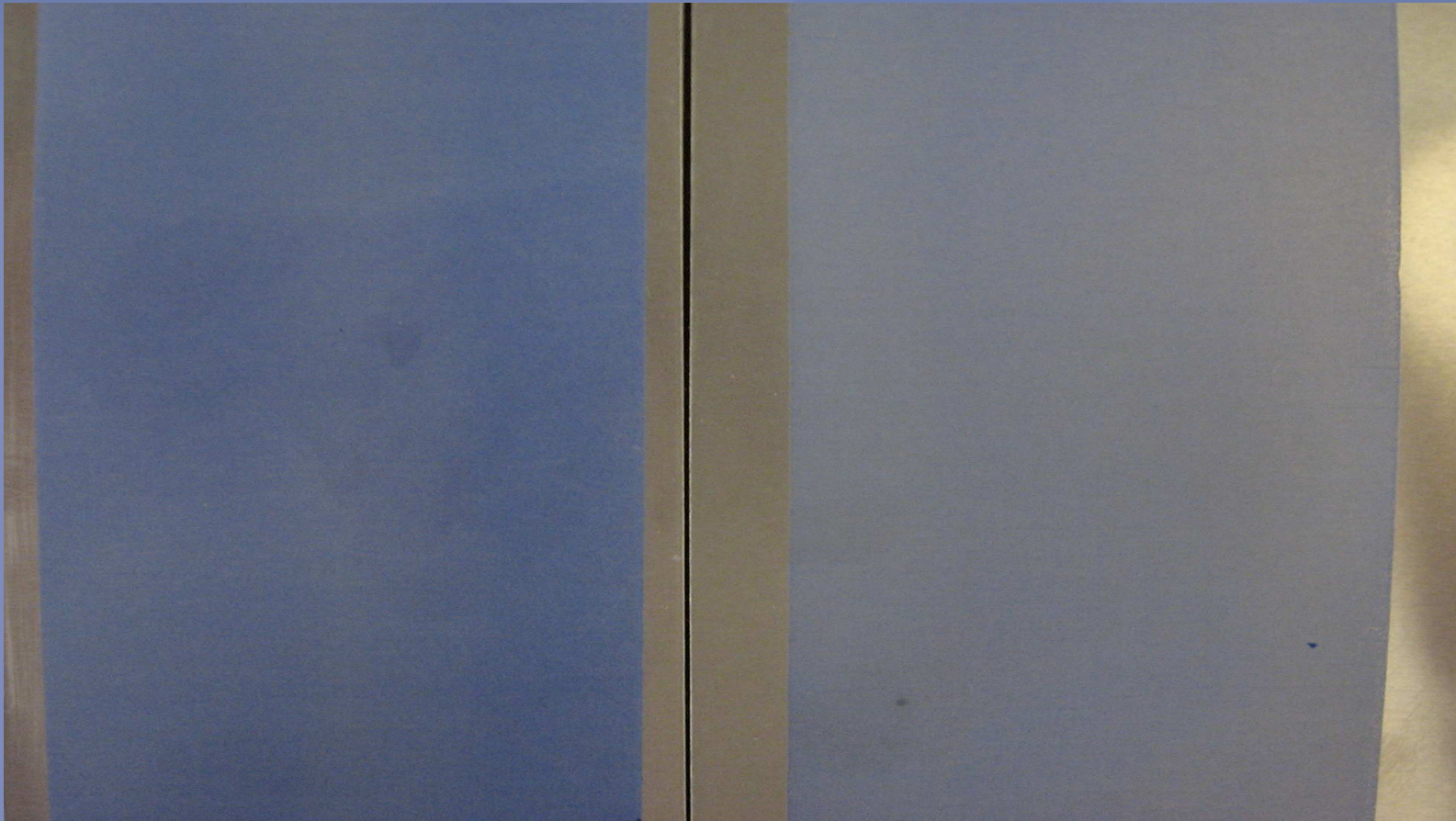
- Improved chemistry
- Improved capsule
- Improved system

Color loss on Cure Today

10 C

New Stabilized Ink

Standard Ink




Manufacturing Considerations

- Run Speeds
- Evaluation of Color
- Set-Up
- Run Stability

Other Considerations

- Customers Needs
- Press Operators
- Corporate Philosophy

Existing Projects

- Korea
 - UK
 - Holland
 - Americas
 - Domestic
- 

A Live Sample

Print @ 7 C

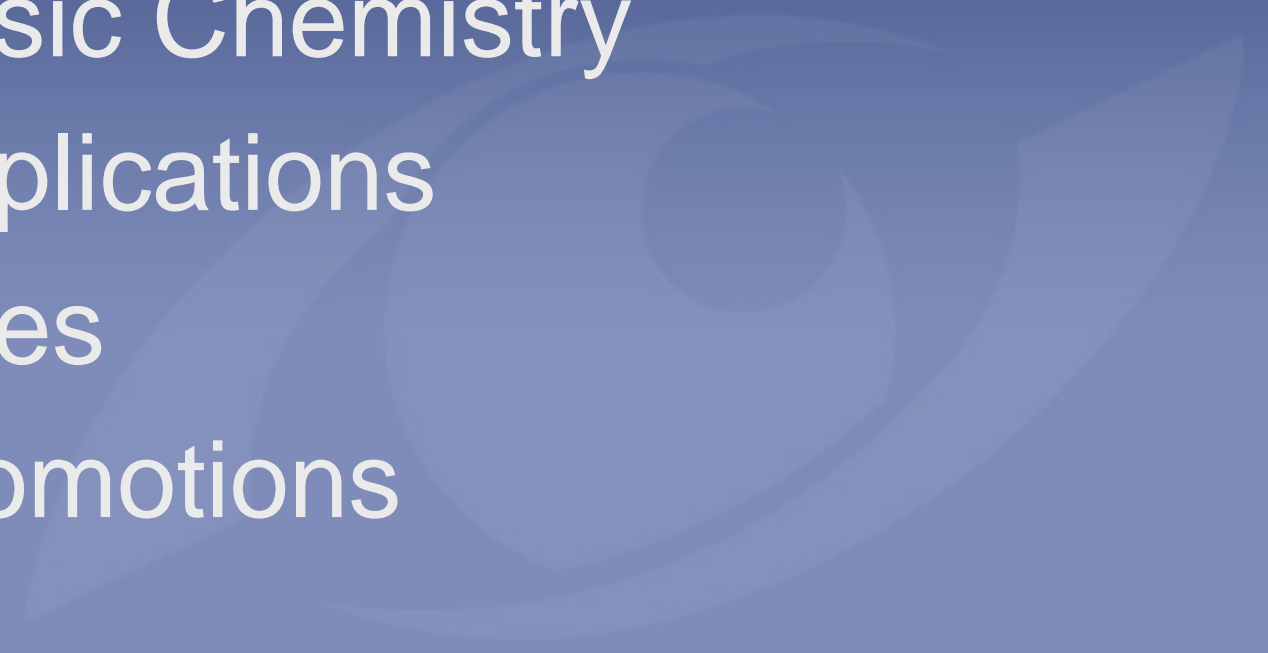
Print @ 25 C




Glow-In-The-Dark

- Effect
 - Promotions
 - Testing Status
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- A faint, stylized illustration of a human eye is visible in the background, rendered in a lighter shade of blue than the slide's background. The eye is looking towards the right side of the frame.

Photochromics

- Basic Chemistry
 - Applications
 - Uses
 - Promotions
- 
- A faint, stylized illustration of a human eye is visible in the background, rendered in a light blue color that blends with the slide's background. The eye is looking towards the right side of the frame.

An Effective Promotion

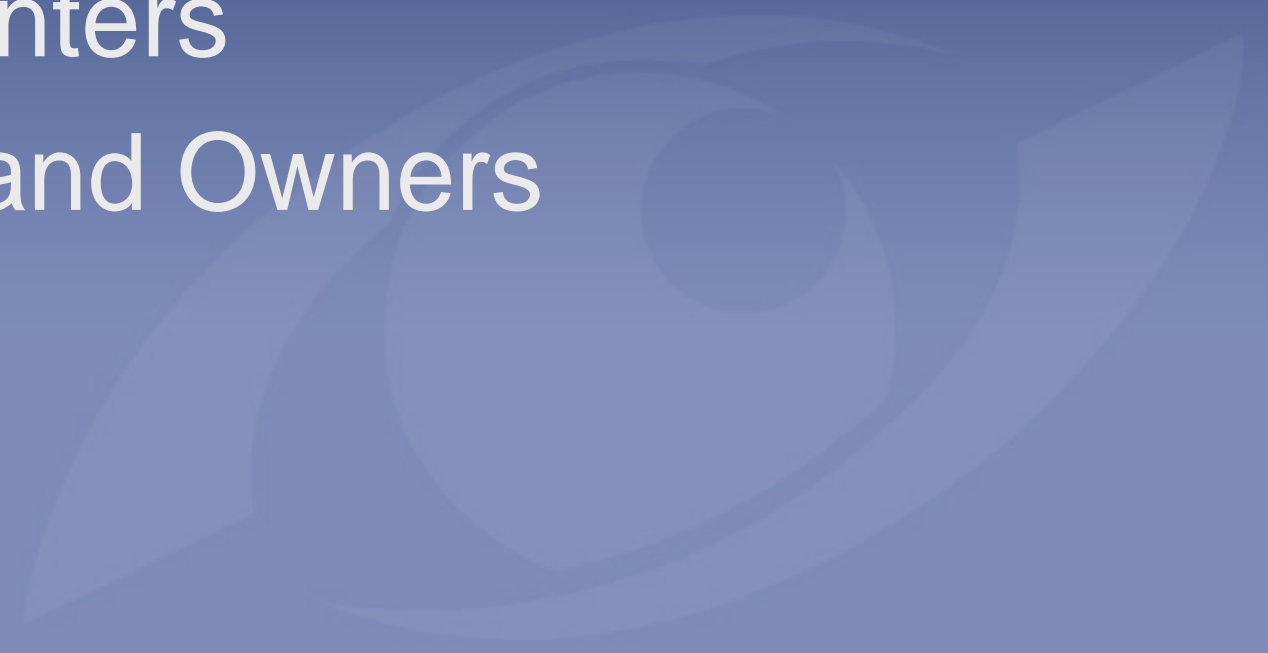
- New
 - Recognizable
 - Affordable
 - Targeted
 - Dramatic
- 

Benefits of Specialty inks on Cans

- Promotions
- Indicators
- Market Differentiation
- Consumer Awareness

Competitive Advantage

- Printers
- Brand Owners



Cost

- Per unit weight of ink
- Per Can
- Other costs
- Overall cost benefit

Questions and Discussion

