



## DATA SHEET

### PHOTOCHROMIC WATER-BASED FLEXOGRAPHIC INK

#### DESCRIPTION

CTI's Photochromic Water-Based Flexo inks are colorless or light colored when not exposed to UV light, and gain color as they are exposed to UV light. The color change is "reversible," meaning the color will fade again upon removal from UV exposure. CTI's inks are available in a variety of colors. CTI's photochromic water-based flexo ink is ideal for document and product security, promotional items, direct mail, games, novelties, etc. Color Availability: yellow, purple and blue.

#### TYPICAL PROPERTIES

	<u>Narrow Web</u>
Viscosity (at 25° C, #2 Zahn Cup)	25-50 sec
pH (initial)	7.3-7.4
Density (Approx.)	8.5 lb./gal
Appearance	Liquid
Percent Solids (Approx.)	31%
Percent Volatiles (Approx.)	<1.0%
Yield Range (Approx.)	10,000-75,000 in <sup>2</sup> /lb. (depending on film thickness)
Recommended Substrates	Uncoated Paper

#### STORAGE AND HANDLING

CTI's products should be stored in a cool, dry. The inks are stable when stored away from heat. The material is combustible and should not be used near open flame. Store Below 80° F. Product must be used within three months of purchase. Consult MSDS prior to use.

#### SPECIAL CARE INSTRUCTIONS

CTI's flexo ink is simple to use, but different from other water-based flexo inks. Those differences are outlined below. The instructions should be followed carefully to achieve optimum results. One of the main objectives in this process is to maximize the coating weight. Thermochromic ink by its nature is a low color intensity ink. The coating weight must therefore be maximized for a given application. If you have your own techniques for increasing coating weight, you may try them.

- Use the smallest anilox number possible. It should be lower than 350. An anilox of below 150 is recommended where high color is desired.
- Compatibility of ink, coating and stock must be determined prior to production runs.
- Use a hard sticky-back.
- Use rubber plates with soft durometer.
- Use very little nip pressure.
- Use a doctor blade instead of a metering roller. If the doctor blade is metallic, be sure the anilox used with the doctor blade is ceramic. This doesn't necessarily improve the coating weight, but does improve the print quality.
- The viscosity of the formulations varies slightly between colors and will be on the high side. The results achieved using this thicker ink will be superior to lower viscosity photochromic inks. You may reduce the ink if desired, but CTI cannot warrantee it once it has been altered.
- The volume of the cells should be as high as possible.





- Clean up with regular solvent, but DO NOT allow the unused ink to come in contact with the solvent. Be sure the press is dry before adding any ink to it. Whatever comes in contact with the ink can potentially harm it.

## **SENSITIVITY**

Photochromic materials are sensitive to adverse environmental conditions. These are listed below, along with a description of the nature of the sensitivity, and recommendations.

**LIGHT:** Long exposure to UV and some fluorescent lights can degrade color intensity and changing characteristics of the ink. Extreme exposure of more than several days of direct sunlight may degrade the color of the ink. Several hundred hours of strong fluorescent light may cause a loss of color and poor color change characteristics. In handling these materials assume that they are similar to fluorescent pigments in terms of light stability.

**HEAT:** Extended exposure to 100° F or higher, can degrade the color change and intensity of the product. Exposure to extreme heat only has an effect if a given temperature is constantly maintained for a given amount of time. If a printed piece were left in an environment where it remained at 100° F for many days, one might then expect to see a reduction in color. At 400° F the time to degradation might be less than an hour. The effect is time and temperature dependent.

**CHEMICALS:** Photochromic materials are sensitive to certain chemicals. Since it is unlikely that the printed piece will come into contact with damaging chemicals under normal conditions, this is not a serious concern. The wet ink should not come into contact with any solvents, including wash-up solvents. Be sure that the press is clean and dry before adding CTI's product to it to minimize chemical exposure. Never add solvents to our ink without first speaking with a CTI representative.

**CONCLUSION:** The ink should be stored in a cool, dry place, away from chemicals and direct light, especially sunlight. Wet ink should be used within three months of receiving it.

For further information or assistance, please contact Chromatic Technologies, Inc. at (888) 294-4CTI.

**DISCLAIMER:** The information and data contained herein are believed to be accurate and reliable; however, it is the user's responsibility to determine suitability of use. Since CTI cannot know all of the applications for the product, or the conditions of use, it makes no warranties concerning the fitness or suitability of its products for a particular use or purpose. Thoroughly test any proposed application of our products and independently conclude satisfactory performance in your application. If the application of the products requires government approval, it is the users responsibility to obtain it. CTI warrants only that its products will meet its specifications. There is no warranty of merchantability or fitness for use, nor any other express or implied warranty. The user's exclusive remedy and CTI's sole liability is limited to refund of the purchase price or replacement of any product shown to be out of claimed specifications. CTI will not be liable for incidental or consequential damages of any kind. Suggestions of uses should not be taken as inducements to infringe any patents.

