



DYNACOLOR™ DATA SHEET

PHOTOCHROMIC UV OFFSET INK

DESCRIPTION

DYNACOLOR photochromic UV offset inks, in printed form, are colorless when kept indoors or when kept out of the presence of UV light. Once they are taken outside and exposed to sunlight or any other UV light source, they will change from their colorless state to a colored state. See Color Availability Chart for a complete list of available colors. **DYNACOLOR**™ UV offset ink is ideal for promotional items, games, novelties, etc.

TYPICAL PROPERTIES

	<u>UV Wet Offset</u>
Viscosity (at 25° C)	300-500 poise
Tack (Initial) at 1,200 rpm/1 min.	10.0-12.0 g*m
Percent Solids (Approx.)	>99%
Percent Volatiles (Approx.)	0%
Food Contact Compliance Status	N/D
Recommended Substrates	Paper, Film
Yield Range (Approx.)	100,000-200,000 in ² /lb. (depending on film thickness)

SPECIAL CARE & USE INSTRUCTIONS

DYNACOLOR™ UV Offset ink is simple to use, but it is a little different from other Offset inks. The differences between our ink and regular UV Offset inks are outlined below. The instructions below should be followed carefully to achieve optimal results. One of the main objectives in this process is to increase the coating weight. Photochromic ink has a larger particle size than regular inks. The way to achieve the strongest color is to get the highest coating weight possible. If you have your own techniques for increasing coating weight, feel free to try them as well.

- Consult Technical Notes for instructions for use.
- Run Speed: **DYNACOLOR**™ ink has been run at 1,400 feet per minute for several hours at a time without serious press problems. On certain presses, one may need to stop the press every hour or so to clean the blanket due to piling.
- Carbonless Paper: The ink can be printed on either side of the CB sheet, or on the uncoated side of the CF. In the case of multi-ply, the ink can be printed on the CFB side. In other words, the ink is incompatible with the CF side of CF paper.

STORAGE AND HANDLING

The inks have excellent stability when stored away from heat. The material is combustible and should not be used near open flame. Store below 90° F. Should be used within twelve months of purchase. Storage longer than twelve months is not recommended. Consult product MSDS prior to use.

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 with regards to them.

LIGHT: Most significantly, 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, though it will probably still change colors. More than 600 hours of a strong fluorescent light may also cause a loss of color in the photochromic. This is true of many different pigments and dyes. In handling these materials, a good rule of thumb is to assume that they are about as sensitive to light as fluorescent pigments are.

HEAT: Extended exposure to very high temperatures, i.e., 100° F or higher, can also degrade the pigment. The effect of light exposure seems to be additive over time. However, with heat, the exposure only has an effect if a given temperature is constantly maintained for a given amount of time. For instance, if a printed piece is left in a car on a hot day, out of the sun, at a temperature of around 130° F for eight hours, one might see slight degradation of the piece. If the same piece is left in the car on a cooler day, say 100° F for the same amount of time, no degradation would be seen. This could happen for months on end before any degradation was seen, as long as the piece were returned to a cooler temperature for the other sixteen hours of the day. If the 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. In other words, the effect is time- and temperature-dependent.

CHEMICALS: Photochromic materials are sensitive to chemical exposure as well. Since it is very unlikely that the printed piece will come into contact with deleterious chemicals under normal conditions, this should not be of great concern. On the other hand, because of the chemical sensitivity and softness of this ink, it also has excellent anti-alteration properties.

CONCLUSION: In short, this ink should be stored in a cool, dry place, away from direct exposure to light, especially sunlight. This is true of both the printed ink and the wet ink. Ink in the can should be used within six months of receiving it. If the color or color reaction is compromised in a security environment, one need only to continue to verify the authenticity of the document by other means; ghost watermark, bleed through inks, etc. We predict that with proper handling, the failure rate of the ink will be less than one half of one percent, and as mentioned above, this means that one need only continue to verify authenticity and not redeem the document for cash until confirmation is established.

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 uses to which its products may be put, or the conditions of use, it makes no warranties concerning the fitness or suitability of its products for a particular use or purpose. You should thoroughly test any proposed use of our products and independently conclude satisfactory performance in your application. Likewise, if the manner in which our products are used requires government approval or clearance, you must 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 otherwise than as warranted. 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.