

# Photochromic Ink Test Kit Users Guide

## BACKGROUND

Photochromics (PC's) change from clear when indoors to color when outdoors. Specifically, PC's change color in response to ultraviolet (UV) light, usually from the sun or a black light.

Reversible Photochromics transform from clear to color by changing their chemical shape after absorbing UV light, usually from the sun or a UV light. The UV light causes the PC's to absorb color (like a dye), and then change back to clear when the UV source is removed. They can cycle thousands of times depending upon the application. They can also change from one color to a different color by combination with a permanent pigment.

## DEFINITION

LCR Hallcrest Photochromic Ink will change from clear to color when activated by UV light. LCR Hallcrest Photochromic Inks change color when exposed to ultraviolet light usually from the sun or a black light. The inks are effectively colorless indoors and turn into vibrant colors outdoors. When brought back inside, the inks become clear again. The inks become intensely colored after only 15 seconds in direct sunshine and return to clear after about 5 minutes indoors. Perfect for textiles and other applications where there is a period of exposure followed by non-exposure to UV light.

## HOW WOULD I USE THIS INK?

Photochromic Ink is particularly effective in transforming images. The black and white outline of a Coke® bottle indoors becomes a full color picture of a full bottle with the words "The Real Thing" and logo appear outdoors. A school name in black and white inside (regular inks), changes into a full color mascot outside. The potential is clearly compelling for sheer novelty, hidden message and paradox concepts (i.e. "less filling" indoors and "tastes great" outdoors).

Probably the most interesting use of the ink is in combination with standard black & white inks. The indoor image might be a graphic of birds in permanent ink. When the person walked outside, the Photochromic Ink would reveal all the colors of the different birds.

The creative expression and visual impact possible is limitless.

## DILUTION

Dilute with water. Inks work when thinned. To keep a more opaque look, do not dilute.

## APPLYING INK

Ink can be applied with a brush, pad, roller or used as a screen ink (silk screening).

## FINISHED LOOK

Paint dries to a matte finish. Ink will not come off on skin. Use laminate or over varnish (spot or spray) for more glossy look.

## PAINT ON ANY SURFACE

Best on absorbent paper and board substrates. Plastics, glass, wood, and ceramic all make good surfaces as well.

## DRYING

Use hot air dryers or IR lamps set to a maximum temperature of 70°C/158°F. Air drying time varies depending on ink thickness.

## FADING

UV light will break down the ink over time.

## CLEAN UP

Photochromic ink is water based and can be cleaned with water only.

## CONTENTS OF KIT

With the contents of this kit you will be able to experiment with UV activated ink. Included in this trial kit are:

### PHOTOCHROMIC INK

Qty	Size	Slurry Color
1	50g	Yellow Slurry
1	50g	Binder
1	50g	Blue Slurry
1	50g	Binder
1	50g	Red Slurry
1	50g	Binder



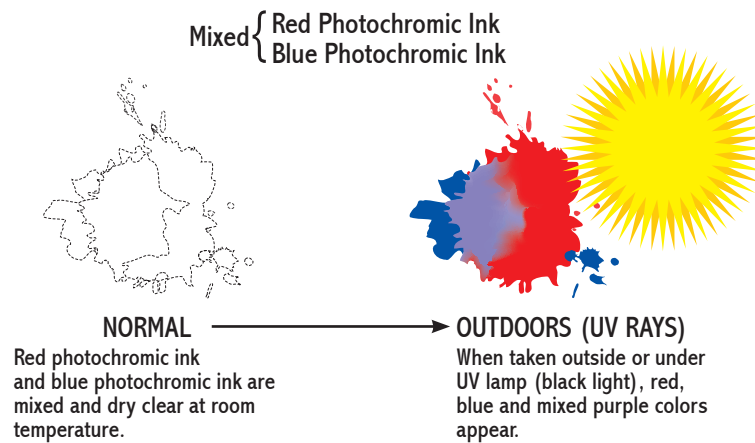
### MAKING THE INK

Mix all the contents of the binder bottle with the contents of the slurry bottle.

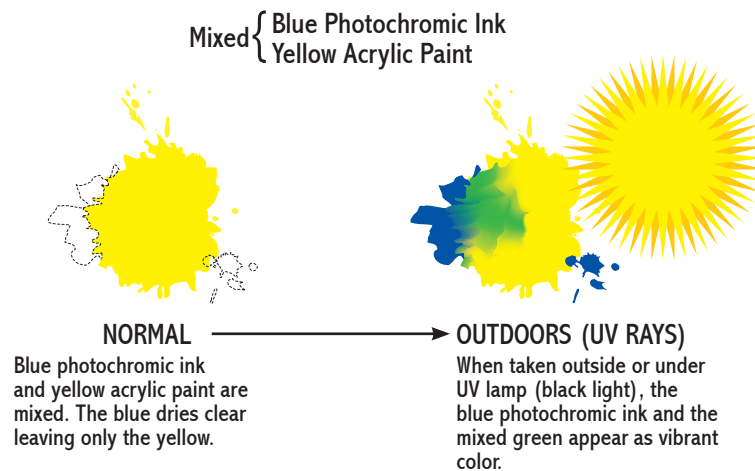
This is a correct weight ratio of 1 to 1 and will make approximately 1/4 C photochromic screen ink.

### MIXING COLORS

Photochromic ink colors can be mixed with other photochromic ink colors. The resulting mixed ink colors all become vibrant when taken outdoors or under any UV light source.



Photochromic ink colors can also be mixed with normally colored acrylic house paint or artist's quality acrylic paint. The result would be that only the photochromic ink color would change with UV light, leaving the original acrylic color behind.



# DESIGN CONCEPTS

## APPLICATION IDEAS



*Activated by sunshine*



### Personal Accessories

Color changing stamped canvas tote.

\*Hint-Use stamp and mix photochromic ink and acrylic paint. The colors will magically appear outside.

Also use a disappearing thermochromic ink and watch how the hot sun makes that change too!



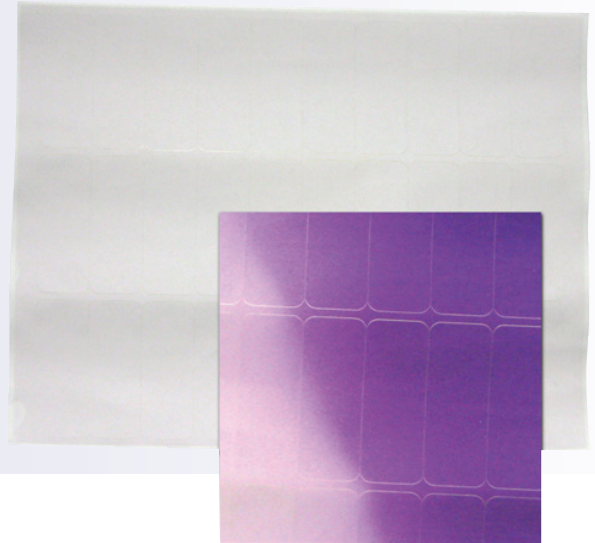
*Activated by sunshine*



### Patio, Deck, and Garden Items.

Hand painted tumblers and cups change colors before your eyes.

\*Hint-Use both acrylic paint and photochromic ink to keep color always showing through.



### Art Projects

White labels coated with clear purple photochromic ink turn purple when exposed to the sun. Great science project demonstrating the effects of UV light.

*Applications are only limited by the imagination!*

See [PDS 071 Rev 01 Photochromic Water Based Screen Ink](#) for additional product information including cleaning and storage instructions.