

Technical Product Information

PHOTOCHROMIC PLASTISOL SCREEN INK UI53000

Functionality: Reversible Photochromic ink

Description

Photochromic plastisol ink for textile substrates. Photochromic plastisol ink is available in 17 different colors including blue, cyan, yellow, red, charcoal (black), green, dark blue, purple, brown, orange, aqua, rose, plum, turquoise, magenta, pink, and gold. The inks can be four color process printed using; cyan, yellow, magenta, and charcoal.

Application

Screen printing ink ideally suited to flat bed screen printing processes onto textile substrates. As with all photochromic inks, the printed effect is dependent upon several factors including press speed, mesh count, etc.

Product Properties

Photochromic properties

Photochromic plastisol inks bring reversible color changing properties to printed items. The inks become intensely colored after only 15 seconds of direct sun light and return to clear after approximately 5 minutes when brought indoors.

The inks fade to clear at different rates. Orange and yellow are the slowest to return back to clear. Yellow even requires visible light to return back to clear. If an exposed shirt is put in a box or other dark area, the yellow will not fade until it is left in normal room light (visible light) for a few minutes.

The inks can be treated like any other plastisol ink and garments should be washed without using chlorine bleach. Chlorine bleach negatively affects the ink and will shorten the life of the color change.

Adhesion

Photochromic plastisol ink produces best print quality on a high quality dense weave or ring-spun cloth. Due to the variations in substrate it is recommended that the ink is tested before any commercial use.

Rub Resistance

No over varnish or laminate is necessary with photochromic plastisol inks.

Additional Product Properties

Light Fastness

Photochromic plastisol inks will degrade from UV exposure over time. Exact life expectancies depend on intensity and duration of UV exposures. T-shirts printed with photochromic plastisol ink will withstand a minimum of 20 typical wearings. UV protective varnish should not be used as this will interfere with the color changing properties of the ink.

Recommended Printing Parameters

Process Printing

Use a 305 mesh screen and a 70 durometer squeegee. Charcoal and Cyan ink may need to be double-hit for better color balance.

Process yellow is very intense and you may want to experiment with reducing the yellow levels in artwork (you can also adjust on the press by squeegee pressure, blade angle, squeegee speed, off-contact, screen mesh, or double hitting other colors).

Spot Color Printing

Print as you would any normal plastisol. Using a finer mesh screen (230-305) is recommended to reduce ink consumption. A heavier mesh screen (110-230) will result in brighter colors but slightly more background color.

Ink Consumption

A typical 12" x 12" (100% coverage) four-color image printed with 305 mesh, double pass all colors but yellow, requires 3-3.5 grams of ink per impression. A gallon of ink prints approximately 1,200 garments. A general rule for usage is 0.02278 grams per square inch of coverage (following the same printing parameters, 305 mesh, double pass all colors but yellow).

Dilution

The ink is ready to print out of the can. Thinners or other modifiers are not recommended because they are likely to hurt the life of the ink. Do not mix spot colors to form additional colors because the spot color inks do not have compatible stabilization systems and the life of the ink will be impaired.

Curing

Plastisol inks WILL NOT AIR DRY. They must be heat cured. In order to properly cure it is important that the entire ink deposit must reach 300°F (149°C). This can be accomplished with the use of a conveyor dryer, flash curing unit, or simple infrared heater. Fully cured inks can withstand repeated washings where as under cured inks are usually the cause of poor washability.

It is also important that curing temperatures not be too high. Temperatures in excess of 330°F will begin to cause degradation to the ink pigments and shorten the life of the color change properties.

Mixing Instructions

It is recommended to mix with a high speed mixer before use (a drill and a mixing blade works fine). The green and aqua inks will thicken over time. Thorough mixing prior to use will thin the inks to normal viscosity.

Do not mix with any other type of ink systems.

Cleaning recommendations

Photochromic plastisol inks should be cleaned like any standard plastisol with mineral spirits or other various screen washes. It is extremely important to have the screens, squeegees, and floodbars as clean as possible to prevent contamination of the inks.

Handling and Storage

Photochromic plastisol inks should be stored away from sources of UV light and high temperature. Ink should be thoroughly mixed prior to use. Keep containers tightly closed to prevent contamination of the inks during storage.

Please consult the MSDS prior to use.

Shelf life of properly stored inks is in excess of three years.

Store plastisol inks at room temperature. Prolonged exposure to temperatures above 90°F (32°C) can cause curing of the ink while it's still in the container.

Do not freeze

Information in this Product Data Sheet is compiled from our general experience and data obtained from various technical publications. While we believe that the information provided herein is accurate at the date hereof, no responsibility for its completeness or accuracy can be assumed. Tests are carried out under controlled laboratory conditions. Information is given in good faith, but without commitment as conditions vary in every case. The information is provided solely for consideration, investigation and verification by the user. We do not except any liability for any loss, damage or injury resulting from its use (except as required by law). Please refer to the Material Safety Data Sheet before using products to ensure safe handling.