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Advanced Thermographic Technologies

Technical Product Information

CHAMELEON PHOTOCHROMIC PLASTISOL SCREEN PRINTING INK

Functionionality: Reversible Photochromic Ink
Revision: 01
Last Revision: 21/02/2013

Description

CHAMELEON Photochromic Plastisol screen ink is suited for natural fibres. The ink is Phthalate free.
The ink is available in 17 different colours 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 considered for four colour process printing using: cyan, yellow, magenta and Charcoal.

Application

CHAMELEON Plastisol screen printing ink is suited to flat bed screen printing processes. As with all colour changing inks the printed effect is dependent upon several factors including substrate, temperature and mesh count.

Product Properties

Photochromic properties
CHAMELEON Plastisol screen printing ink brings colour changing properties to printed items. The inks become intensely colored after only 15 seconds of direct sunlight and return to clears after approximately 5 minutes.
Different colours fade back 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 textile print or coat is put in a dark area, the yellow will not fade until it is left in normal room light (visible light) for a few minutes.
Garments printed with photochromic ink should be washed by hand without using Chlorine bleach, as it negatively affects the ink and will shorten the life of the colour change.
The color change is ñreversibleò. When evaluated in the same conditions with varying temperatures, the colour intensity generated by Plastisol Photochromic screen ink is reduced at high temperatures (50 C) when compared to lower temperatures (less than 25 C).

Standard colours	Blue, yellow, purple
Special colours	Red, orange, other colour available upon request

Adhesion
Photochromic plastisol ink produces best print on a high quality dense weave. Due to the wide variety of substrates it is recommended that this ink is evaluated fully prior to any commercial use.

Rub Resistance
No over varnish is required for the Plastisol ink.

Additional Product Properties

Light Fastness
Photochromic inks are inherently susceptible to damage by UV light. They will degrade from UV exposure over time. Life expectancies depend on intensity and duration of UV exposures.
UV protective varnish should not be used as this will interfere with the colour changing properties of the ink.

Recommended Printing Parameters

Screen Configuration
The optimum screen configuration depends on several factors, the most important of which is the desired colour of the finished product.
Charcoal and Cyan may need to be double-hit for better colour balance.

Recommended Mesh Size	**90T**
Minimum Mesh Size	**150T**

Dilution
The ink is supplied in a ready to print format. Thinners or extenders are not recommended as the ink is likely to be damaged, and this will result in poor performances.
Do not mix colours. Each individual colour has a specific stabilisation system that should not be modified.

Drying
The ink will not air dry. The ink must be heat cured. In order to properly cure, the entire ink film must reach 149 C (300 F). This curing process can be accomplished by using a conveyor drier, flash curing units or infrared heaters. Fully cured ink film can withstand repeated washings as under cured inks are usually the cause of poor washability. It is also important that curing temperatures does not exceed 165 C (330 F), as higher temperature will degrade the film of ink and affect colour change properties.

Mixing instructions
It is recommended to mix with a high speed mixer before use (a drill and a mixing blade works well). The green and aqua ink will thicken over time. Thorough mixing prior to use will thin the inks to normal viscosity. Do not mix with other inks systems.

Cleaning recommendations
CHAMELEON® Plastisol Screen Ink should be cleaned on screen using standard mineral spirit based screen washer or standard screen washers. It is extremely important to have the screesn, squeeges and floodbars as clean as possible to prevent contamination of the ink.

Handling and Storage

CHAMELEON® Plastisol Screen Ink will remain stable if stored away from solvents, sources of UV light and temperatures above 25 C and below 10 C. Do not store in temperatures in excess of 32°C as curing of the ink will start in the container. Keep container tightly closed to avoid cross contamination.
Do not freeze**.** Do not mix with other ink systems.
Mix thoroughly prior use.

Shelf life: 1 year, when stored in the right conditions.

Please consult Material Safety Data Sheet before use