QCR Solutions Corp
Quality + Consistency + Reliability

Version: 2013.08.SIUV

Technical Data Sheet

Photochromic Screen Inks (UV Curable)
Reversible Temperature Reactive Material

Photochromic Screen Inks (UV Curable) is suitable for a wide range of substrates including paper, plastic (polyethylene, TC polypropylene), coated papers and board substrates. The ink is supplied as a 1 part ink system ready formulated and easy to use allowing flexibility in application and optimization in appearance of printed articles.

Colors include blue, yellow, purple, red, Orange and other colors upon request and against minimal volume order

Application

Screen printing ink ideally suited to flat bed screen printing processes and rotary screen units providing the ink is cured (exposed to UV lamps). As with all Photochromic Screen inks, the printed effect is dependent upon several factors including press speed, substrate, drying time/temperature and mesh count.

Product Properties

Color Reactions

Conventional UV Cure Photochromic screen ink becomes intensely colored after only 15 seconds of direct sun light exposure and return to clear after approximately 5 minutes out of any source of UV light. The different colors 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 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. The color change is “reversible”. When measured in the same conditions with varying temperatures, the color intensity generated by the Conventional UV Cure Photochromic screen ink is reduced at high temperatures (50 C) when compared to lower temperatures (less than 25 C).

Adhesion

Photochromic Conventional UV Cure Screen Ink is suitable for polyethylene, TC polypropylene, paper, coated paper and boards, however, due to the wide variety of substrates it is recommended that this ink be fully evaluated prior to any commercial use.

Rub Resistance

The Photochromic ink exhibits good rub resistance properties. If a high level of resistance is required then a suitable over varnish or laminate can be used.

Over printability/lamination Properties

Photochromic Conventional UV Cure Screen Inks is best overprinted with UV letterpress, UV offset and UV flexo varnish (additive may be needed). However, an evaluation for compatibility should always be carried out prior to commercial use.

Technical Specifications

Particle Size:	<6 microns (95%)
Solvent:	N/A
Supplied Viscosity:	9000 – 25000 cps

Light Fastness

Photochromic inks are inherently susceptible to damage by UV light. They are only recommended for uses in application with minimal exposure to UV light. UV protective varnish should be used to slow degradation caused by UV light.

Light fastness properties of supplied Photochromic colors are as follows:*

Blue, Purple, Red, Orange & Yellow 1-2

*Rating according to measurement on Blue Wool Scale

Heat Behavior

Reversible Photochromics are showing reduced color intensity when ambient temperature is higher than approx 40 to 50 C. Conversely, at low temperature the color of the UV irradiated print will take longer to come back to clear state in a UV radiation free environment.

QCR Solutions Corp
Email: info@qcrsolutions.com • Phone 772-237-5354 • Fax: 772-672-3544 • www.qcrsolutions.com

QCR Solutions Corp
Quality + Consistency + Reliability

Version: 2011.08.SIW

Technical Data Sheet

Photochromic Screen Inks (UV Curable)
Reversible Temperature Reactive Material

Recommened Printing Parameters

Screen Configuration

The optimum screen configuration depends on several factors, the most important of which is the desired opacity and color of the finished product.

The theoretical ink volume of the screen is crucial for matching the desired effect. Using a higher theoretical ink volume will effect the print as follows:

	Activated < 20°C
	Metric / US
Recommended Mesh Size	120T / 310
Minimum Mesh Size	150T / 379

Ink consumption

Typical ink consumption for Photochromic conventional UV Screen Ink on a 120T mesh is approx. 10g to 12g per sqm. When obliterating an image, 2 passes may be required.

Dilution

The printing ink is supplied in a format that is at printing viscosity. Should the ink need to be thinned to suit application then UV thinners such as TPGDA or TMPEOTA should be used. Care must be taken with the use of diluents as Photochromic inks can be susceptible to damage with various reagents. Do not add more than 10% of diluents to the mixture.

Curing

The ink should be cured using conventional UV curing methods.

Cleaning recommendations

After use, screens can be cleaned with a standard general purpose cleaner/screen wash. Use a clean screen free of solvents when printing Photochromic Conventional UV Cure Screen Ink since Photochromic effect can be affected by the presence of solvents.

Storage and Handling

Shelf Life 3 Months
Do not store in temperatures in Excess of 25°C/77°F
Do not freeze

All Applications using any QCR Solutions Corp products should be thoroughly tested prior to approval for production.

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.

QCR Solutions Corp
Email: info@qcrsolutions.com • Phone 772-237-5354 • Fax: 772-672-3544 • www.qcrsolutions.com