

Technical Data Sheet

Photochromic Screen Inks (Water Based) Reversible Temperature Reactive Material

Photochromic Screen Inks (Water Based) are 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

Photochromic Water Based Screen printing ink is ideally suited to flat bed screen printing processes onto absorbent paper and board substrates for applications such as labels, tags, tickets and boards. As with all Photochromic inks the printed effect is dependent upon several factors including press speed, substrate, drying time/temperature and mesh count. The prints exhibit a matte finish. Therefore, it is always recommended that over laminate or spot varnish is used to give a glossy aspect.

Product Properties

Color Reactions

Photochromic Water Based Screen Ink brings reversible color changing properties to printed items. The print is clear and becomes colored when exposed to UV light.

Adhesion

Photochromic Water Based Screen Ink is suitable for absorbent paper and boards. Due to the wide variety of substrates it is recommended that this ink is evaluated fully prior to any commercial use.

Rub Resistance

An over varnish or laminate is necessary if any resistance to abrasion is required as resistance to pressure is low.

Over printability/lamination Properties

Hot laminates can be used with Photochromic WB Screen Inks. Photochromic WB Screen Inks can also be overprinted with UV offset, UV flexo and UV screen varnish. However an evaluation for compatibility should always be carried out prior to commercial use.

Technical Specifications

Particle Size:	<6 microns (90%)
Solvent:	Water
Supplied Viscosity:	>15000 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.

Recommended 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.

Do not allow the ink to sit dormant on the screen as this will cause 'drying in' on the screen and effect print definition and quality.

Use a clean screen free of solvents when printing Photochromic Water based Screen Ink since the Photochromic effect can be affected by traces of solvents.

Recommended Mesh Size	195 US
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Ink consumption

Typical ink consumption for Photochromic Water Based Screen Ink on a 195 mesh is approx. 10g to 12g per sq ft. When obliterating an image, 2 passes may be required.

Dilution

The printing ink is supplied in a format that once mixed is at printing viscosity. Should the ink need to be thinned to suit application then only water should be used. No alternative thinners should be used as these will affect both the performance of the ink and the Photochromic function. No more than 15% water should be added to the ink system.

Drying

The ink can be either air dried or dried using hot air dryers or IR lamps set to a maximum temperature of 70°C/158°F.

Care should be taken when stacking the finished product as if too much pressure is applied to uncoated ink (not varnished or laminated) offsetting of the print can occur.

Cleaning recommendations

Photochromic Water Based Screen Ink should be cleaned on screen using water only. Glycol based cleaners should not be used as these will damage the function of the ink. After use screens can be cleaned with water. A high powered water jet may be required to remove all ink remnants.

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.