

Technical Data Sheet

Thermochromic Textile Screen Inks (Water Based) Reversible Temperature Reactive Material

Thermochromic Textile Screen Inks (Water based) for textile substrates. The ink is supplied as ready to use one part ink system. It is easy to use allowing flexibility in application and optimization in appearance of printed article.

Colors and Activation Temperatures

The activation temperature is defined as the temperature above which the ink has almost achieved its final clear or light color end point. The color starts to fade at approximately 4°C below the activation temperature and will be in between colors within the activation temperature range. The color change is "reversible," i.e., the original color will be restored upon cooling.

Colors include Black, Blue, Magenta, Green, Orange, Red, Purple, Brown and Custom Matching is available.

Activation Temperatures can be set anywhere between 10°C through 69°C. It is defined as the temperature above which the pigment has almost (>95%) achieved its final clear or light color end point.

Application

The Thermochromic Textile Screen Inks are ideally suited for flat bed screen-printing processes onto textile substrates. As with all thermochromic inks, the printed effect is dependent upon several factors including press speed, mesh count, and etc.

Printing Recommendations

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 the desired effect. Using a higher theoretical ink volume will increase the intensity of color of the product when below it's activation point and also the level of residual color when above it's activation point.

	Activated <20°C Metric / US	Activated >20°C Metric / US
Recommended Mesh Size	12/31	14/39
Minimum Mesh Size	150/379	150/379

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

Dilution

The printing ink is supplied in a format that once mixed is at printing viscosity. The ink should not be thinned. Water should never be used to dilute this system.

Technical Specifications

Pigment Content:	24% +/- 1.5%
Particle Size:	<6 microns (95%)
Solid Content:	50% +/- 2.0%
Solvent:	Water
Supplied Viscosity:	1500 – 2000 cps

Mixing Instructions

It is recommended that a mechanical stirrer or similar device be used to mix the product effectively. Never use bead or ball mills to blend the ink parts together. Do not mix with other ink systems.

Cleaning Recommendations

Thermochromic Water Based Textile 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.



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Storage and Handling

Thermochromic Water Based Textile Screen Ink should be stored away from solvents, sources of UV light and high temperature to gain optimum performance from the product.

Shelf Life of Mixed Ink: 3 Months

Do not store in temperatures in Excess of 25°C/ 77°F

Do not freeze

As the product is water based it is important to keep the containers tightly shut to avoid evaporation and skinning of the product.

Sensitivity

Rub Resistance

Has high dry and wet fastness properties and hand washing resistance if polymerized accordingly. Printed article is not suitable for Machine Washing.

Light

Thermochromic inks are inherently susceptible to damage by UV light. They are only recommended for uses in applications where there would be minimal exposure to UV light. Where necessary a suitable UV protective varnish should be used to slow degradation caused by UV light.

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

Green	1
Red, Orange & Magenta	1-2
Yellow, Blue, Purple	2
Turquoise	3

*Rating according to measurement on Blue Wool Scale

Adhesion

The adhesion of Thermochromic Water Based Textile Screen Ink depends upon the surface properties of the selected substrate. Due to the wide variety of substrates it is recommended that this ink is evaluated fully prior to any commercial use or application of a suitable varnish.

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.