

Technical Product Information

Thermochromic Water Based Textile Screen Ink TI 51000

Function: Reversible Thermochromic Ink

Product Name: Thermochromic WB Textile Screen Ink

Description

Water based thermochromic textile screen ink for textile substrates.

Ink is supplied as a 1 part ink system ready formulated and easy to use allowing flexibility in application and optimisation in appearance of printed article.

Application

Textile screen printing ink suited to flatbed screen printing processes. As with all thermochromic inks the printed effect is dependent upon several factors including substrate, drying time, temperature and mesh count. The printed ink exhibits a matt finish when printed.

Product Properties

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.

Rub Resistance

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

Additional Product Properties

Pigment Content (%)	24 ± 1.5
Pigment Size (µm)	95% less than 6 microns
Solid Content (%) ¹	50 ± 2.0
Solvent	Water
Supplied Viscosity (cps) ²	1500-2000

¹ AMB50 Moisture Content Analyzer

² Mixed ink measured on a LVT Brookfield Viscometer @ 25°C/ 77°F

Light fastness

Thermochromic inks are inherently susceptible to damage by UV light. They are only recommended for use in applications where there will 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

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.

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 its activation point and also the level of residual color when above its activation point.

	Activated Below 20°C European/US Measurement	Activated Above 20°C European/US Measurement
Recommended Mesh Size	120T / 310	70T / 195
Minimum Mesh Size	150T / 379	150T / 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.

Drying

The ink should be cured at 160°C / 320°C for 2 minutes.

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.

Handling

Thermochromic Water Based Textile Screen Ink is a 1 part ink system that will remain stable if stored in the correct storage conditions.

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.

Storage

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
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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.

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.