



Technical Product Information

THERMOSTAR® WATER BASED TEXTILE SCREEN INK 1460

Functionionality: Reversible Thermochromic Ink

Product Number: 1460

Revision: 02

Last Revision: 15/04/2015

Description

THERMOSTAR® Water based textile screen ink is for textile substrates suc as cotton and wool. The ink is supplied as a 2 parts ink system easy to use allowing flexibility in application and optimisation in appearance of printed articles. The ink is available as Bispenol A free grade.

Application

THERMOSTAR® Water based textile screen ink is suited to flat bed screen printing processes. The thermochromic effect is dependent upon several factors including substrate absorbance and dry ink film thickness. The printed ink exhibits a matt finish when printed.

Product Properties

Adhesion

The adhesion of THERMOSTAR® Water Based Textile Screen Ink depends upon the surface properties of the substrate. Due to the wide variety of substrates it is recommended that this ink is evaluated fully prior to any commercial use. Curing at 130 C will give better adhesion. Addition of a crosslinker like Carbodiimide or Aziridine may improve as well.

Rub Resistance

The ink shows high dry and wet fastness properties as well as hand washing resistance if cured according to recommendations. The resulting printed articles cannot be machine washed as they can lose part of their Thermochromic properties.

Additional Product Properties

Pigment Content (%) in the finished ink	24 ± 1.5
Pigment Size (µm)	90% less than 6 microns

Solid Content (%)¹	42 ± 3.0
Solvent	Water
Supplied Viscosity (cps)² of the binder	> 5000

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 THERMOSTAR® colours are as follows:*

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

*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 colour intensity of the finished product.

A higher theoretical film weight will increase the intensity of colour of the product when fully coloured and also the level of residual colour when above clearing point.

The following recommendations are starting points to help press operators finding the ideal printing conditions.

	Activated Below 20°C European/US Measurement	Activated Above 20°C European/US Measurement
maximum Mesh Size	50T / 195	50T / 195
Minimum Mesh Size	120T / 379	120T / 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. If necessary, maximum 5 % water can be used as reducer.

Drying/Curing

The ink should be cured at 130°C / 265°F for 3 minutes. Addition of a crosslinker like aziridine or carbodiimide will reduce curing temperature. However it is recommended to run test prior large scale application

Cleaning recommendations

Screens can be cleaned with water. A high powered water jet may be required to remove all ink remnants. Glycol based cleaners will damage the function of the ink

