

Technical Product Information

THERMOSTAR[®] SOLVENT BASED SCREEN INK 1440

Functionality: Reversible Thermochromic ink
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Description

THERMOSTAR[®] Solvent Based Screen Ink is suitable for a wide range of substrates including plastic (treated polyethylene and treated polypropylene, polycarbonate), coated papers and board substrates. The ink is supplied as a 1 part ink system ready formulated allowing optimisation in appearance of printed article by bringing **reversible colour changing properties**. The ink is available as Bisphenol A free grade for most colours and temperatures.

Application

THERMOSTAR[®] Solvent Based Screen Ink ideally suited to flat-bed screen printing processes. As with all thermochromic inks, the printed effect is dependent upon several factors including press speed, substrate, drying time/temperature and mesh count.

Product Properties

Thermochromic properties

The print is fully coloured 3-5 degrees below the activation temperature and colourless above the activation temperature.

Standard activation temperatures are 15, 31 and 47°C (59, 88 and 117°F). Activation temperatures included within -10 and +69°C (14 and 149°F) are all available.

Adhesion

THERMOSTAR[®] Solvent Based Screen Ink is most suitable for treated polyethylene and treated polypropylene, polycarbonate. It is recommended to ensure that the surface tension of the plastic surface is at minimum 42 dynes/cm.

Due to the wide variety of substrates it is recommended that this ink is fully evaluated prior to any commercial use.

Rub Resistance

The ink exhibits good rub resistance properties.

Overprintability / Lamination Properties

THERMOSTAR® Solvent Based Screen Inks can be overprinted. However, an evaluation for compatibility should always be carried out prior to commercial use.

For applications that use a thermochromic ink that is activated at cold temperatures (less than 20°C/68°F) we would recommend the use of a matt laminate for optimum effect.

Additional Product Properties

Pigment Content (%)	27 ± 1.5
Pigment Size (µm)	95% less than 6
Solvent	Approx 40%

Light Fastness

Thermochromic 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.

Light fastness properties of supplied THERMOSTAR® colours are as follows:*

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

*Rating according to measurement on Blue Wool Scale

Heat Behaviour

Reversible Thermochromics are showing thermal Hysteresis. This means temperature against colour curves on the heating cycle does not match the cooling cycle curve.

Thermochromics consistently heated up at temperatures above 50°C (122°F) will slowly lose colour intensity below the activation temperature.

Recommended Printing Parameters

Screen Configuration

The optimum screen configuration depends on several factors, the most important of which is the desired opacity and colour 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 affect the print as follows:

- Below the activation temperature, colour intensity is increased
- Beyond the activation temperature, the level of residual colour is increased accordingly.

