



## Technical Product Information

### THERMOSTAR® UV CURE FLEXOGRAPHICGRAPHIC INK 1220

**Functionality:** Reversible Thermochromic ink

**Article No:** 1220

**Revision:** 04

**Last Revision:** 15/04/2015

#### Description

Thermostar UV Cure Flexographic ink is Supplied ready formulated. The ink is suitable for a range of substrates including plastic (polyethylene, TC polyethylene and TC polypropylene), paper, coated papers and board substrates. Thermostar® UV Cure Flexographic Ink allows flexibility in application and optimisation in appearance of printed articles by bringing **reversible colour changing properties**. The ink is available as Bisphenol A free grade for most colours and temperatures.

#### Application

Thermostar UV Cure Flexographic ink is suitable for in line printing onto a wide range of substrate for applications such as labels, tags, tickets, boards providing the ink is cured (exposed to UV lamps). The Thermochromic printed effect is dependent upon several factors including press speed, substrate, drying and print thickness.

#### 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 also available.

##### Adhesion

THERMOSTAR® UV Cure Flexographic Ink is suitable for plastic substrates (polyethylene, TC polyethylene, TC polypropylene), paper, coated paper and boards. However, due to the wide variety of substrates it is recommended that this ink is evaluated fully prior to any commercial use.

## Overprintability/Lamination Properties

THERMOSTAR® UV Cure Flexographic Inks is best overprinted with UV Letterpress, UV Offset and UV Flexographic varnish (additive may be needed). For applications that use a Thermochromic ink that is activated at cold temperatures (less than 20°C/ 68°F) we recommend the use of a matt laminate for optimum effect. For warm and hot temperature activation inks (20°C/ 68°F and above) we recommend a gloss laminate.

## Additional Product Properties

<b>Pigment Content (%)</b>	<b>27 ± 1.5</b>
<b>Pigment Size (µm)</b>	<b>90% less than 6</b>
<b>Solvent</b>	<b>N/A</b>
<b>Supplied Viscosity (cps) <sup>1,2</sup></b>	<b>600-3000</b>

<sup>1</sup> Measured on a LVT Brookfield Viscometer at 25°C / 77°F

<sup>2</sup> Viscosity can slightly differ from one colour to another

## 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. Temperature against colour on the heating cycle does not match the cooling cycle.

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

## Recommended Printing Parameters

### Anilox Configuration

Using a higher theoretical ink volume will increase the colour intensity of the product when below its activation temperature. Thermochromic ink colour intensity increases with dry ink film thickness.

<b>Anilox Line SPI</b>	<b>Anilox Line SPC</b>
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