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Advanced Thermographic Technologies

CHAMELEON® **THERMOCHROMIC UV FLEXO INK**

Functionality: Reversible Thermochromic ink

Revision: 02

Last Revision: 14/09/2011

Description

CHAMELEON UV Cure Thermochromic Flexo ink is suitable for a wide range of substrates including plastic (polyethylene, TC polyethylene and TC polypropylene), paper, coated papers and board substrates. Supplied as a 1 part ink system ready formulated and easy to use, CHAMELEON® Conventional UV Cure Flexo Ink allows flexibility in application and optimisation in appearance of printed articles.

Application

CHAMELEON® conventional UV Cure Thermochromic Flexo 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). As with all Thermochromic inks the printed effect is dependent upon several factors including press speed, substrate, drying and print thickness.

Product Properties

Thermochromic properties

CHAMELEON® conventional UV Cure flexo ink brings **reversible colour changing properties** to printed items. The print is fully coloured 3 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

CHAMELEON® Conventional UV Cure Flexo 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

CHAMELEON® Conventional UV Cure Flexo Inks is best overprinted with UV Letterpress, UV Offset and UV Flexo 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 would recommend the use of a matt laminate for optimum effect. For warm and hot temperature activation inks (20°C/ 68°F and above) we would recommend a gloss laminate.

Additional Product Properties

Pigment Content (%)	30 ± 1.5
Pigment Size (µm)	90% less than 6
Solvent	N/A
Supplied Viscosity (cps)^{1,2}	800-2000

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

² 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 caused by UV light.

Light fastness properties of supplied CHAMELEON® 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. Thermochromic prints can experience far more than 1000 heating/cooling cycles above their activation temperature.

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

The optimum anilox 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 anilox is crucial for matching the desired effect. Using a higher theoretical ink volume will increase the colour intensity of the product when below its activation point.

	Anilox Line SPI	Anilox Line SPC
Recommended Anilox Number*	100- 150	70 - 130
Recommended anilox	11 BCM	11 BCM

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.