

## Technical Product Information

### CHAMELEON SHEETFED OFFSET INK 1130

**Functionality:** Reversible Thermochromic ink

**Article No:** 1130

**Revision:** 04

**Last Revision:** 15/03/2015

#### Description

Chameleon® Sheetfed Offset Ink is an oil based Thermochromic ink for absorbent paper and board substrates. Supplied as a 1 part ink system ready formulated. The Ink is available as BPA (Bisphenol A) and BPA free grades.

#### Application

Chameleon® Sheetfed Offset Ink is an offset printing ink suited to wet offset printing processes and applications such as labels, tags, tickets etc. As with all thermochromic inks the printed effect is dependent upon several factors including press speed, substrate, drying time... Since the film weight when printing offset is considerably lower than when printing Flexo or Screen, the colour intensity in the finished print is reduced accordingly.

Thermochromic offset inks cannot be used to hide a print. For this specific application we recommend using screen printing process. Chameleon® Sheetfed Offset Ink is not suitable for 4 colour process due to inherent properties of thermochromic colours.

#### Product Properties

##### Thermochromic properties

Chameleon® Sheetfed Offset Ink brings **reversible colour changing properties** to printed items. 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

Chameleon® Sheetfed Offset Ink is designed to be printed onto absorbent paper. Due to the wide variety of substrates it is recommended that this ink is evaluated fully prior to any commercial use.

##### Rub Resistance

The ink exhibits good rub resistance properties on absorbent substrates. If a high level of

resistance is required than a suitable over varnish or laminate can be used.

### Over printability/Lamination Properties

Both heat and cold set laminates can be used with Chameleon® Sheetfed Offset Inks however an evaluation for compatibility should always be carried out prior to commercial use.

### Additional Product Properties

<b>Pigment Content (%)</b>	<b>30 ± 1.5</b>
<b>Pigment Size (µm)</b>	<b>95% less than 6</b>
<b>Solid Content (%)</b>	<b>90 ± 2.0</b>
<b>Solvent</b>	<b>Mineral Spirits</b>
<b>Supplied Viscosity (cps) <sup>1</sup></b>	<b>15000-18000</b>

<sup>1</sup> Mixed ink measured on a LVT Brookfield Viscometer

### 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.

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

### Recommended Printing Parameters

#### Press configuration

When printing Chameleon® Sheetfed Offset Inks, a higher thickness of ink deposit than conventional Sheetfed Offset Inks will be required to gain a satisfactory effect.

Thoroughly clean all press equipment and rollers of any traces of ink and solvents. Any contamination will have a negative effect on both the aspect of the print and the Thermochromic properties.

#### Dilution

Thermochromic inks are sensitive to various reagents. Avoid contact with solvents of any kind. If diluents are required a small amount of high boiling mineral oil can be used. Fount solutions containing ethanol content will also have an adverse effect and should be avoided.

## **Cleaning recommendations**

Care must be taken not to contaminate the ink with any cleaning material as this can inhibit the thermochromic function of the ink.

## **Handling and Storage**

Chameleon® Sheetfed Offset Ink is a 1 part ink system that will remain stable for 6 months if kept in the unopened original container and if stored away from solvents, sources of UV light and high temperatures (25°C/77°F).

Please, consult MSDS prior to use.

Shelf Life 6 Months

SDS number: 1130 or 1132

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