

Technical Product Information

THERMOSTAR SHEETFED OFFSET INK 1130

Functionality: Reversible Thermochromic ink

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Description

ThermoStar® 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

ThermoStar® 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. ThermoStar® Sheetfed Offset Ink is not suitable for 4 colour process due to inherent properties of thermochromic colours.

Product Properties

Thermochromic properties

ThermoStar® 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

ThermoStar® 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 ThermoStar® Sheetfed Offset Inks however an evaluation for compatibility should always be carried out prior to commercial use.

Additional Product Properties

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

¹ 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 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 can lose colour intensity below the activation temperature.

Recommended Printing Parameters

Press configuration

When printing ThermoStar® 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

ThermoStar® 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

Information in this Product Data Sheet is compiled from our general experience and data obtained from various technical publications. Whilst we believe that the information provided herein is accurate at the date hereof, no 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.