

Technical Product Information

CHAMELEON® **THERMOCHROMIC EPOXY SCREEN INK**

Functionality: Reversible Thermochromic ink

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Description

CHAMELEON® Epoxy screen ink is recommended for printing onto glass and fired Ceramic. The ink can also be used to be printed onto plastic and metals (aluminium, stainless steel). Once cured, the print shows superior detergent and abrasion resistance. When printed onto glass, CHAMELEON® Epoxy screen ink produces dish wash resistant print in most cases. Supplied as a 2 parts ink system, CHAMELEON® Epoxy screen ink allows optimisation in appearance of printed article.

Application

CHAMELEON® Epoxy screen ink is suitable for general screen application. As with all thermochromic inks the printed effect is dependent upon several factors including press speed, substrate, drying time/temperature, print thickness.

PRODUCT PROPERTIES

Thermochromic properties

CHAMELEON® Epoxy screen 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® Epoxy screen ink shows very good adhesion onto glass, fired ceramics, plastics and metals (aluminums, stainless steel). However, due to the wide variety of substrate properties it is recommended that CHAMELEON® Epoxy screen ink is evaluated fully prior to any commercial use.

Abrasion Resistance

The CHAMELEON® Epoxy screen ink exhibits very good abrasion resistance properties on multiple substrates when cured in optimum conditions.

Overprintability/Lamination Properties

CHAMELEON® Epoxy screen ink does not require to be overprinted or laminated.

Additional Product Properties

Pigment Content (%)	28 ± 1.5
Pigment Size (µm)	90% less than 6
Viscosity (Cps) when both parts mixed	200 000 ± 100 000

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. Most thermochromic prints can experience more than 1000 heating/cooling cycles above their activation temperature. Thermochromic prints consistently heated up at temperatures above 50°C (122°F) will slowly lose colour intensity below the activation temperature.

RECOMMENDED PRINTING PARAMETERS

MIXING

The CHAMELEON® Epoxy screen ink is supplied as a 2 parts system.

For optimum properties, prepare the ink as follows by mixing:

- 7 parts of the CHAMELEON Thermochromic epoxy base,
- 1 part of the epoxy hardener.

Mix thoroughly to obtain homogeneous mixture and the right viscosity. Once mixed the ink has a pot life of 4 to 8 hours.

CURING

The CHAMELEON® Epoxy screen ink can be cured in one of the following conditions:

Baking 30 minutes at temperature included between 150 C (300 F) and 160 C (320),

Drying 1 hour with hot air (70 C to 90 C) circulation (solvent evaporation).

The print requires 7 days at room temperature (20-25C) to achieve full curing.

The substrate will normally dictate which time and temperature is most suited.
However, when printing onto glass substrate, best dish wash resistance is obtained by baking the ink at 160 C (320F) for 30 minutes, shortly after the printing process.
Baking process will always give the most durable finish when compared against room temperature curing process.

Screen

European 49-90 mesh recommended for most applications, depending on colour strength required.

Stencils

Use a lacquer proof or direct emulsion film, photographic or water soluble hand-cut Stencils.

Cleaning recommendations

Standard epoxy screen ink cleaning system is recommended. However, care must be taken not to cross contaminate the next print run with cleaning fluids.

HANDLING AND STORAGE

CHAMELEON® Epoxy screen ink should be stored away from solvents, sources of UV light and high temperature. CHAMELEON® Epoxy screen ink is a 2 parts ink system that will remain stable if kept in the tightly closed supplied container and stored at temperatures included between 10 C and 25 C. It is important to keep the containers tightly closed.

Please consult MSDS prior to use.

Shelf Life 1 Months

Do not store in temperatures in Excess of 25°C / 77°F

Do not freeze

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.