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Technical Product Information

THERMOSTAR® EPOXY SCREN INK 1480

Functionality: Reversible Thermochromic ink
Article No: 1480
Revision: 05
Last Revision: 15/04/2015

DESCRIPTION

THERMOSTAR® 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, THERMOSTAR® Epoxy screen ink produces dish wash resistant print in most cases.
Supplied as a 2 parts ink system, THERMOSTAR® Epoxy screen ink allows optimisation in appearance of printed article. It is available as Bisphenol A free versions.

APPLICATION

THERMOSTAR® 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, ink film thickness..

PRODUCT PROPERTIES

THERMOCHROMIC PROPERTIES

THERMOSTAR® 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

THERMOSTAR® 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 THERMOSTAR® Epoxy screen ink is evaluated fully prior to any commercial use.

ABRASION RESISTANCE

The THERMOSTAR® Epoxy screen ink exhibits very good abrasion resistance properties on multiple

substrates when cured in optimum conditions.

OVERPRINTABILITY/LAMINATION PROPERTIES

THERMOSTAR® 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

Themochromic 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. Temperature against colour on the heating cycle does not match the cooling cycle.
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 THERMOSTAR® Epoxy screen ink is supplied as a 2 parts system.
For optimum properties, prepare the ink as follows by mixing:
- 7 parts of the THERMOSTAR 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 THERMOSTAR® Epoxy screen ink can be cured in one of the following conditions:

- Baking at 130 C for 30 minutes (yellow, Green approx. Pantone 356)
- Baking 30 minutes at temperature included between150 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 150 C (320F) for 30 minutes, shortly after the printing process. Baking at 130 C is also giving good results.
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

THERMOSTAR® Epoxy screen ink should be stored away from solvents, sources of UV light and high temperature. THERMOSTAR® 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 20 C. It is important to keep the containers tightly closed. Do not freeze.

Shelf Life 1 Months

Please consult MSDS prior to use. SDS number: 1480 or 1482, 1483 and epoxy Thinner SDS