

Thermochromic Ceramic Mug Kit

Description

The reversible water based Thermochromic Ceramic Mug Kit is a range of high performance coating designed to give a chemical resistant finish to ceramic-based articles. The coating range has been developed to provide a VOC compliant coating of excellent flow and image clarity. The appearance of the product is maintained during processing due to the high degree of abrasion resistance inherent in the polymer system.

Application Suggestions

The product is supplied as a 3 part system and designed to be applied by both conventional spray and electrostatic disc equipment to spray into ceramic, metal and glass surfaces. The product exhibits a matt finish when applied. Over lacquer of a suitable industry standard coating is always recommended to protect the thermochromic materials once applied.










Product Properties

Thermochromic Properties

The Thermochromic Ceramic Mug Kit brings reversible color changing properties to printed items. The print is fully colored 3 degrees below the activation temperature and colorless above the activation temperature.

Standard activation temperatures are 15, 31 and 47 °C. Activation temperatures included within -10 and +69 °C are all available.

Colors available are displayed in the chart below. Pantone match is available upon request.

Black		↔		Colorless
Blue		↔		Colorless
Red		↔		Colorless
Orange		↔		Colorless
Green		↔		Colorless
Magenta		↔		Colorless
Purple		↔		Colorless
Turquoise		↔		Colorless
Yellow		↔		Colorless
**Colors are approximate and are intended as a visual guide only. A small amount of residual color is likely and this will vary depending on the thickness of product lay down. **				

Pigment Content (%)	20%
Pigment Size (µm)	95% is > 6 microns
Solid Content (%)	46 ± 2.0
Solvent	Water
Supplied Viscosity (cps) ²	600-900

Printing Recommendations

Adhesion

The ThermoChromic Ceramic Mug kit is dedicated to be applied onto ceramic, glass and metal substrates. Due to the wide variety of substrates it is recommended that this coating system is evaluated fully prior to any commercial use.

Substrate Preparation

The substrate must be clean, free from contaminants and grease. If small areas of contamination are evident then localized cleaning with surfactant wash is recommended. On highly contaminated articles, steam degreasing is advised.

Over Printability Properties

We recommend that the kit be top-coated with a suitable glossy coating. For applications that use a thermoChromic that is activated at a cold temperature (less than 20 oC), we would recommend the use of a matt top coating for optimum effect. For warm and hot activation (20 oC and above), we would recommend the use of a glossy top coating.

Mixing Instructions

It is recommended that a mechanical stirrer or similar device be used to mix the product effectively. Never use bead or ball mills to blend the ink parts together.

Do not mix with other coating systems.

Mixing ratios by % weight:

Part A: Clear Lacquer	55.9
Part B: ThermoChromic Pigment	24.0
Part C: Adhesion Promoter	1.1
Water (to be supplied by customer)	19.0

****All parts should be mixed in the order above starting with Part A and finishing with water. ****

Dilution

The coating is supplied in a format that once mixed is at spraying viscosity. If required after following mixing instructions above extra water may be added to thin the product. We recommend that the viscosity should stay within the parameters of 25-30 seconds measured on a DIN4 flow cup at 25 °C.

Curing

Curing conditions are as follows: 8 minutes at 200 °C in a convection oven.

Cleaning Recommendations





The kid should be cleaned using either water or industry standard cleaners. Care must be taken not to contaminate the product with any cleaning solution as this can be damage to the thermoChromic functionality.

Stability

Light-Fastness

Thermochromic inks/coatings are inherently susceptible to damage by UV light and are only recommended for uses in application with minimal exposure to UV light. UV protective varnishes should be used to slow degradation with applications where UV light is present.

Blue Wool Scale Rating

Colors		Rating
Green		1
Red, Orange, Magenta		1-2
Yellow, Blue, Purple		2
Turquoise		3

Storage and Handling

The Thermochromic Ceramic Mug Kit is a 3 part system that will remain stable for 12 months if stored separately away from solvents, sources of UV light and high temperatures, and kept in original unopened container. The kit should be thoroughly mixed prior to application. Please consult to MSDS prior to use.

As the product is water based, it is important to keep the containers tightly sealed to avoid evaporation and skinning of the product.

Shelf life of Unmixed Product: 12 months

Shelf life of Mixed Product: 8 hours

Do not store in temperatures in excess of 25 °C and DO NOT freeze.

All applications using this product should be thoroughly tested prior to approval for production.

The information herein is believed to be reliable and is to assist customers in determining whether our products are suitable for their applications. However, no warranty, express or implied, is made as to its accuracy or completeness and none is made as to fitness of this material for any purpose. Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute any other warranty, express or implied, including any warranty of merchantability or fitness, nor of protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special, incidental, or consequential damages. We shall not be liable for damages to person or property resulting from its use. Consult the Material Safety Data Sheet for additional information.