



UV Curable Ink System

Suggested Uses:

The Vinall Series is a UV curable ink system specially formulated for vinyl banner and static cling vinyl applications. The VL Series has a high performance resin system that provides excellent flexibility for sewing, grommeting and folding during finishing processes. Vinall Series offers block resistance for 2-sided printing decoration and superb intercoat adhesion for multiple color decoration. Vinall inks use high-grade pigments offering opacity and lightfastness for indoor and outdoor applications.



Product Features

- *Block resistant ink film
- *Excellent opacity and high gloss film
- *Excellent exterior exposure to weatherable ink film
- *Fast cure speeds for in-line printing
- *Good intercoat adhesion

Recommended Substrates:

1 & 2 sided vinyl banner fabrics, pressure sensitive vinyl, static cling vinyl, rigid and flexible vinyl. Full testing by the end user is recommended to determine suitability of product for a specific substrate and application.

Mesh:

Mesh counts of 355 threads per inch or higher are recommended for opaque colors where a single (1) lamp system is used. Mesh counts of 305 threads per inch or higher are recommended for opaque colors, where two (2) lamp systems are used. Mesh counts should be selected based upon the end user's ability to cure the ink deposit.

Stencil:

Direct or capillary emulsions that are UV compatible, with a dry micron thicknesses between 7—10 μ is recommended. Thicker stencils can be used based upon the ability to cure the increased ink deposit.

Squeegee:

Sharp 70-90 durometer polyurethane blade or multi-durometer blades can be used. For optimal ink lay down, a sharp 80 durometer blade is recommended.

Coverage:

2,800 to 3,000 square feet per gallon based on film deposit of .40-to .60-mil thickness.

Thinner:

Mix well prior to every use. Although the Vinall Series has been supplied in press ready condition for most applications, this system may be reduced up to 10% with UVO Universal Thinner.

Clean Up:

Use Norcote Screen-Cote products for clean up and reclamation.

Precautions:

Gloves and / or barrier cream is recommended when handling UV inks. Safety glasses are suggested, particularly for areas where ink may be splashed. If skin contact occurs, wash affected area with soap and water (do not use solvent or thinners).

Cure & Adhesion:

A minimum of 125 mJ/cm² and .300 watts per inch is required for complete cure. Adhesion should be at a minimum of 95% from curing unit, with full adhesion within one hour of initial cure. When using coarser screen meshes, cure conditions may need to be adjusted for the increased ink deposit. If a loss of gloss and / or adhesion due to insufficient cure is noticed, the use of 5—10% Vinall Series Mixing Clear will increase light penetration and improve cure.



Outdoor Use:

Extensive QUV accelerated weathering tests have been conducted on banners printed with the Vinall Series. The Vinall Series withstood 1,000 hours of exposure in a QUV chamber, with 4 hour cycle times of UV light and condensation, with minimal color changes and no shrinkage. Based on prior correlations of accelerated testing versus real time Florida exposure, 500 hours is equal to approximately one year, 45° south Florida. The use of premium grade, long-term vinyl films is recommended for all applications intended to weather more than two years. Refer to the product warranty guide for complete warranty specifications.

Accelerated machine weathering are reference standards and can not precisely reproduce actual outdoor performance.

Pre Masking:

The Vinall Series is suitable for pre-masking. The use of a medium to high tack adhesive is recommended for good adhesion to the ink film.

Metallics:

The Vinall-8011 Metallic Mixing Clear is supplied to use for mixing metallic powders and pastes, such as silver and gold. The increased viscosity of the Metallic Mixing Clear helps to ensure a good powder suspension. Recommended mixing ratios are: 8% by weight of Silver, 20% by weight of Gold.

Packaging:

Available in one (1) gallon and five (5) gallon containers. Smaller or larger quantities are available upon request.

Color Range:

Specific colors can be matched at Norcote® against prints, wet ink or PANTONE® numbers.



Standard Colors:

VL 123	Medium Yellow
VL 131	Brilliant Orange
VL 141	Fire Red
VL 151	Scarlet Red
VL 155	Rubine Red
VL 160	Rhodamine Red
VL 190	Process Blue
VL 200	Peacock Blue
VL 205	Reflex Blue
VL 210	Ultra Blue
VL 220	Emerald Green
VL 485	Warm Red

Color Matching Guide:

VL 101	Primrose Yellow
VL 111	Lemon Yellow
VL 114	CMG Orange
VL 121	CMG Red (YS)
VL-127	CMG Violet
VL 165	CMG Magenta
VL 230	CMG Blue
VL 325	CMG Green

Whites, Blacks and Clears:

*VL 010	Mixing Clear
VL 011	Metallic Mixing Clear
VL 012	Overprint Clear
VL 015	Satin Overprint Clear
VL 026	Barrier White
VL 027	Super Opaque White
VL 030	Shading Black
*VL 031	Tinting White
*VL 301	Opaque Black
VL 305	Jet Black
VL 311	Opaque White

* Used in Norcote's Color Matching guide

Process Colors:

The VL four-color process colors exceed "SWOP" standards. Variation in densities may be achieved with the use of VL 450 Halftone Base. For the best results, use a plain weave mesh and a smooth, thin stencil coating.

Product Identification	Density
VL 410 HT Yellow	1.10
VL 420 HT Magenta	1.75
VL 430 HT Cyan	1.80
VL 440 HT Black	2.00
VL 450 HT Base	N/A

Fluorescent Colors:

Fluorescent colors are available upon request. Fluorescent pigments are not light fast beyond 60-90 days even with the use of an overprint clear. For maximum brightness and color stability, 230-260 mesh count is recommended.

Chartreuse
Orange/Yellow
Orange
Orange/Red
Rocket Red
Pink
Green
Blue

Metallics:

Introducing metallic materials into an ink will reduce the shelf life of the ink. Actual shelf life is dependent upon individual users conditions. As a general rule, it is recommended that only enough metallic ink is mixed for one days use (approximately 8 hours). Paste should be stored between 65° F-95° F to avoid solidification. If this occurs, reliquify the product by placing in an area with temperatures of 25° C-35° C.

040 Gold Paste
042 Silver Paste
044 Red Gold Paste
046 Copper Paste
240 Rich Gold Ink
242 Silver Ink



Storage & Available Warranties

All UV Vinall Series inks should be stored in tightly closed, black polyethylene containers in an area with the temperature not to exceed 90° F (32.2° C). Avoid direct sunlight and indirect white light. Excess ink from print runs should be stored in separate containers to avoid contamination and is not covered under any warranty. When stored under these conditions, Norcote warrants the Products shall be free from defects in material and manufacture for a period of one (1) year from the date of sale for the Vinall Series standard inks, with no additives, and for a period of one (1) month from the date of sale for any custom color containing Day Glo® JZB or T-Powder. Norcote will not warrant any custom colors containing metallic pastes. Any warranties provided will be limited to the price paid for the actual products used which give rise to the warranty claim.

This Technical Bulletin is intended to be used for informational purposes only, and is in no way intended to create any warranties or other obligations on behalf of Norcote. All warranties, terms and/or conditions for a particular product will be specified on the applicable invoice and are only valid upon the creation of a legally-binding contract.

Testing

Due to the inability of Norcote to anticipate or control the conditions under which the Products and information relating thereto will be used and/or stored, Norcote cannot guarantee the results obtained from using the Products. Any Suggested Uses are merely representative, and because the final product will depend on a number of specific factors, the end user should pretest all substrates with the Products prior to use in production.

*PVC Plastics:

Decoration can aggravate embrittlement properties of PVC plastics which can lead to cracking and failure of the plastic. It is strongly recommended that the end user contact the polymer manufacturer to obtain information on the suitability for decorating with a UV ink as well as recommendations for molding / processing to reduce this potential. As every situation can not be tested for in a laboratory environment, it is the responsibility of the end user to determine the suitability of the products chosen for an end application.

Revision: 08/30/2010
Supersedes: 02/11/2010



506 Lafayette Avenue
Crawfordsville, IN 47933
Toll Free: 800-488-9180 / Ph: 765-362-9180
Fax: 765-364-5408
email: support@norcote.com
www.norcote.com

Nor-Cote® Int'l Limited
+44-2380-270-542
email: info@nor-cote.co.uk

Nor-Cote® International Pte Ltd
+65-6291-0898
email: norcote@pacific.net.sg

Norcote Internacionales
de Mexico S.A. de C.V.
+52-818 394 8299
email: info@norcotemx.com