

Suggested Uses:

The Norcon series was designed for use in container applications where direct printing is required. The Norcon series is suitable for use on treated HDPE, treated LDPE, treated Polypropylene, Styrene, PET and PVC. For some PVC and PETG applications, primarily thin walled containers, embrittlement of the container can occur resulting in cracking or shattering of the container. For minimum walled applications, the 04 Series ink is better suited for direct printing on PVC containers. For additional suggestions and information, please contact Technical Service. **It is the responsibility of the end user to pretest all substrates with Norcote® products prior to use in production.**

Product Features

- NVP Free
- Excellent Gloss
- Wide Range of Adhesion
- Quick Curing
- No Additives Required
- Great Intercoat Adhesion
- Flexible
- High Print Definition
- Superb Gloss

Printing Recommendations:

All inks should be thoroughly mixed prior to use. Inks are supplied at print ready viscosity for most applications. If adjustment is needed the UVO-TH Universal Thinner or NC-049 Overprint Clear can be used to thin the ink.

Mesh:

A mesh count of 355 threads per linear inch and higher (140 cm²) low elongation, monofilament polyester is suggested. Tension should range from 18-25 N/cm² on a rigid frame.

Stencil:

All direct emulsions and thin capillary films (15-25µ before application) compatible with UV inks are acceptable.

Squeegee:

A sharp 80 shore durometer polyurethane squeegee is preferred. Inks can be printed with durometers ranging from 60-90 as well as dual durometer squeegees.

Curing Parameters:

Norcote® Norcon series inks cure only when exposed to UV light ranging between 280-400 nanometers. Curing speeds depend on several factors including ink film thickness and the energy level of the lamps. Ink should be cured immediately after printing.



Curing Equipment:

Norcon series inks are fast curing and work well with one focused 300 watts/in (120 watts/cm) or two 200 watt/in (80 Watts/cm) medium pressure mercury vapor lamps.

Adhesion:

The Norcon series is a post-curing system. Although further cross-linking occurs up to 48 hours later, the Norcon series inks should pass a crosshatch tape test, (ASTM #D3359-97), using 3-M 600 tape after exiting the curing unit and cooling to room temperature. In-line, direct flame treat of Polyethylene and PET containers is recommended for optimum performance.

Intercoat Adhesion:

Norcon series inks intercoat adhesion is very good. Although loss of intercoat adhesion is difficult, it should be monitored throughout the production run especially when printing 6 or more passes. Use of additives may adversely affect intercoat adhesion.

Screen Cleaning:

Most conventional solvent cleaners work well. Alcohol based solutions must be avoided as they break down the emulsion. Norcote recommends Press Wash 110 (flash point 113° F), 140 (flash point 140° F) or NSW-824 (flash point 150° F). These products are used for cleaning ink off screens during on press color changes or before storing the screen. They work well when removing ink from squeegees, flood bars and other equipment. Contact us for packaging options.

Coverage:

Approximately 2,500 square feet per gallon. Note: Coverage, cure and color are affected by the mesh count, screen tension, and other press variables.

Mixing

All Norcote® Norcon series colors are intermixable.

Chemical Resistance:

The Norcon series inks have been subjected to a variety of common chemicals to determine chemical resistance. Norcon series inks have proved to resist most common chemicals when properly cured. Full chemical resistance is achieved after 48 hours or post cure.

Water Resistance:

If water resistance is required, cross-hatch tape adhesion must be attained upon exiting the curing unit and before any further testing is performed. Test thoroughly for conformance to your specific water resistance requirements.

Metallic Colors:

Most metallic pigments work well with the NC-000 Mixing Clear. Ability to cure a suspension is related to pigment load and UV exposure. Select mesh with openings large enough to transfer the metallic pigments of choice; generally a mesh count of 305 threads per inch (120/cm) or lower is required. Metallic pigments will reduce the shelf life of NC Series ink mixtures. RECOMMENDATION: Mix only enough metallic ink for one day.

Precautions:

Avoid direct contact of ink with skin and clothing. If contact occurs, wash affected area with warm soapy water and dry thoroughly. If eye contact occurs, irrigate the area with water for 15 minutes and consult a physician. For more specific information, refer to the relevant Material Safety Data Sheet.

Color Range:

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



Standard Colors:

Opaque White	1046
Super Opaque White	1056
Opaque Black	1019
Jet Black	4000
Yellow-Green Shade	015
Yellow-Red Shade	2233
Radiant Orange	020 •
Red	022
Rhodamine Red	023
Rose	024
Emerald Green	030
Spruce Green	031
Permanent Blue	034
Violet	035
HF Violet	335*
Mixing Clear	000
Overprint Clear	049

• **May not be suitable for lightfast applications and is not recommended for prolonged exposure to direct sunlight.**

* Halogen free per the International Electrotechnical Commission standard IEC 61249-2-21.

Fluorescent Colors/JZB's:

Aurora Pink (Blue shade)	11 B
Aurora Pink (Yellow shade)	11 Y
Rocket Red	13
Fire Orange	14
Blaze Orange	15
Arc Yellow	16
Saturn Yellow	17
Signal Green	18
Horizon Blue	19
Corona Magenta	21

Metallics:

Gold Paste	040	• (See Note)
Silver Paste	042	
Red Gold Paste	044	
Copper Paste	046	
Rich Gold Ink	240	
Silver Ink	242	

040 paste should be stored between 18C-35C to avoid solidification. If this occurs, reliquify the paste by placing it in an area with temperatures of 25C-35C.

Key Additives

Thoroughly mix all additives both prior to and after addition into base inks. Store additives in a tightly sealed container.

065-Flow and Bubble Control:

Used to control bubbles which may occur in the wet ink film upon screening. This effect is primarily observed during screenprinting on high gloss surfaces, during high-speed printing. Use of 065 will adversely affect intercoat adhesion; monitor intercoat adhesion throughout the production run. Do not exceed additions of 1.5% by weight.

067-Adhesion Promoter:

Norcote's® 067 Adhesion Promoter will enhance adhesion characteristics when printing on coated metals, raw metals and most plastics. It also enhances the chemical and water resistance as well. See the product application guide for 067.

UVO-TH Universal Thinner:

Enhances transfer of ink through the screen by reducing ink viscosity. Most useful for high-speed printing applications. Excessive amounts of UVO TH Thinner will reduce cure rates and impair surface durability. It may affect weatherability. Do not exceed additions of 10% by weight.

073 Cure Promoter:

Improves depth and speed of cure. Most useful for promoting rapid curing of thick ink deposits, particularly when applied to heat sensitive substrates. The 073 Cure Promoter will increase surface hardness and may increase gloss if curing conditions and production speeds remain unchanged. Mix inks fresh daily. Use of 073 may affect intercoat adhesion; monitor cure and adhesion throughout the production run. Do not exceed additions of 3% by weight.

076 Flexibilizing Agent:

Primarily designed to increase flexibility for embossing, folding or any application where severe ink elongation on a flexible or rigid substrate is required. Excessive use of 076 will affect cure rate, surface hardness and chemical resistance. Do not exceed additions of 15% by weight.

100 Thickening Agent:

This powder will thicken the ink, yet will not dramatically affect the gloss. Monitor cure and adhesion of the Norcon series inks when using thickening agent. Increased ink film thickness may result when printing more viscous inks. Do not exceed additions of 2% by weight.

170 Anti-Stat Gel:

Prevents static and fuzzy prints. Anti-stat gel should be added to the ink fresh daily. Intercoat adhesion should be monitored throughout the production run. Do not exceed additions of 12% by weight.

300 Matting Powder:

This powder increases the matte effect and viscosity of the Norcon series inks. Monitor cure and adhesion. Do not exceed additions of 10% by weight.

900 Matting Powder:

This powder will increase the matte effect and viscosity when used in the Norcon series inks. Monitor cure and adhesion when using 900 powder. Increased ink film thickness may result in printing more viscous inks. Additions greater than 5% by weight will impair surface durability. The 900 Matting agent is recommended for mesh counts of 305 threads per inch or lower. Do not exceed additions of 15% by weight.

WRA-172:

This additive will increase water resistance and post cure. Add at 3-5% by weight.



Storage & Available Warranties

All UV 04 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 04 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 or any inks intermixed with competitor products.** 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.

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