



Product Features

- * Abrasion Resistant
- * Chemical Resistant
- * Opaque
- * Quick Curing
- * Resistant to Blocking
- * Great Intercoat Adhesion
- * Superb Adhesion
- * Multi-purpose Product

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 80-070 Thinner or 80-049 Overprint Clear can be used to thin the ink.

Mesh:

A mesh count of 255-380 threads per linear inch (100-150 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® 80 Series inks cure only when exposed to UV light of the proper wavelength. Curing speeds depend on several factors including ink film thickness and the energy level of the lamps. Ink should be cured immediately after printing.

Suggested Uses:

The 80 Series is recommended for use on polyethylene (container and flat sheet), soft vinyl's (French calf, suedene, patent, etc.), some flat sheet polypropylene, PVC, polycarbonate, PETE, PETG, most decal materials, many polyesters (print treated and top-coated), paper and card stocks, styrene, most acrylics, bookcloths and some coated metals.

UV Curable Ink System



Curing Equipment:

80 Series inks are fast curing and work well with one 300 watts/in (120 watts/cm) or two 200 watt/in (80 watts/cm) medium pressure mercury vapor lamps. The 80 Series inks will cure up to 100 feet per minute (30 meters per minute) with most focused UV curing units.

Screen Cleaning:

Most conventional solvent cleaners work well. Norcote's® NSW-824 Screen Wash is an environmentally friendly cleaner proven effective with UV and other inks. It is available in 1 and 5 gallon containers or 55 gallon drums. Refer to the NSW-824 technical data sheet for additional information. Alcohol based solutions must be avoided as they break down the emulsion.

Coverage:

Approximately 2,500 square feet per gallon (230 square meters per gallon) depending on printing variables affecting ink film thickness and coverage.

Mixing:

All Norcote® 80 Series colors are intermixable. They may also be mixed with the 88 Matte Series inks to provide a wide range of gloss levels. Addition of 88 Series inks will impair 80 Series surface durability.

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



Adhesion:

The 80 Series is a nonvisual post-curing system. Although further cross-linking occurs up to 24 hours later, the 80 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.

Intercoat Adhesion:

80 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.

Weatherability:

Weather resistance is subject to conditions of use. Consult the Technical Service Department prior to use for information regarding weather resistance of the 80 Series inks.

Scoring and Folding:

The 80 Series inks provides fair results under controlled scoring and folding conditions. To obtain acceptable results, the 80 Series inks must pass a crosshatch tape test, (using 3-M 600 tape) before scoring and folding. Highly pigmented (opaque) inks and inks with special effects pigments may not score or fold well. For further details contact the Norcote® Technical Service Department.

Chemical Resistance:

The 80 Series inks have been exposed to a variety of chemicals to determine chemical resistance. 80 Series inks have proved to be resistant to most common chemicals when properly cured.

Process Colors:

80 Series Halftone Process inks were designed for 4-color process printing. Color density can be adjusted with the addition of process toners or 060 Halftone Base. To achieve a minimum ink deposit, thus reducing pile height and dot gain, one should use a minimum stencil thickness.

Metallic Colors:

Most metallic pigments work well with the 80-049 Overprint 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 80 Series ink mixtures. RECOMMENDATION: Mix only enough metallic ink for one day.

Color Range:

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

**Standard Colors:**

Mixing White	002
Opaque White	1046
Non-Chalking Opaque White	1056
Mixing Black	005
Opaque Black	1019
Deadfront Black	1022
Brown	007
Radiant Yellow	012 •
Medium Yellow	017
Opaque Yellow	2233
Lightfast Yellow	2313
Permanent Orange	019 •
Lightfast Orange	2872
Red	022
Rhodamine Red	023
Rose	024
Graphic Red	025
Magenta	026
Emerald Green	030
Spruce Green	031
Permanent Blue	034
Violet	035
Reflex Blue	037
Peacock Blue	038
Overprint Clear	049
Process Blue	050
Opaque Process Blue	2021

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

Process Colors:

Halftone Base	060
Halftone Process Cyan	080
Halftone Process Magenta	081
Halftone Process Yellow	082
Halftone Process Black	083
Process Cyan Toner	880
Process Magenta Toner	881
Process Yellow Toner	882
Process Black Toner	883

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

Transparents:

Transparent Red	092
Transparent Green	093
Transparent Blue	094
Transparent Yellow	095
Lt LED Red	2286
Dk LED Red	2287

All transparent colors have limited intercoat adhesion

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.

80-060 Halftone Base:

A thick clear used in the screenprinting of halftone or 4-color process reproductions. 80-060 may be used to decrease the density of a color in order to match the color key. Additions of 060 will enhance fine line detail or fine copy negative artwork. Additions of 20% or less by weight will correct most variations in color density or print quality. Use of 80-060 will adversely affect lightfastness.

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, or on certain types of vinyl (where plasticizer conditions may exist). Use of 065 will adversely affect intercoat adhesion; monitor intercoat adhesion throughout the production run. Do not exceed additions of 1.5% by weight.

80-070 Thinner:

Enhances transfer of ink through the screen by reducing ink viscosity. Most useful for high-speed printing applications. Excessive amounts of 070 will reduce cure rates and impair surface durability. Use of 070 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.

075 Vinyl Adhesion Modifier:

Improves the wetting characteristics of the inks on vinyl substrates; 075 may eliminate the need to wipe the plasticized vinyl prior to printing. The 075 aids in the elimination of bubbles and enhances adhesion regardless of most plasticizer conditions. Vinyl Adhesion Modifier will also increase the cure rate. Use of 075 will reduce the shelf life of the 80 Series inks. Mix only enough ink for one day. Use of 075 will affect weatherability. Do not exceed additions of 5% 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 weatherability. Don't exceed additions of 15% by weight.

077 Rate Enhancer:

Developed to accelerate the cure rate of the 80 Series inks. Most useful for promoting rapid cure of heavy ink deposits, particularly when applied to heat sensitive substrates. Add only if necessary as 077 will increase gloss. Mix inks containing 077 fresh daily. 077 may affect intercoat adhesion. Monitor intercoat adhesion throughout the production run. Do not exceed additions of 5% by weight.

078 Polycarbonate Adhesion Modifier:

The 078 will enhance adhesion and cure

rates. The additive is most useful for accelerating production speeds, particularly when processing heat sensitive substrates that are susceptible to distortion. Do not exceed additions of 5% by weight.

079 Adhesion Modifier:

Enhances the adhesion of 80 Series inks on coated card stock, some metals and other specified materials; most useful for prints requiring die-cutting to a bleed edge. The 079 will increase the viscosity of the 80 Series inks. Use of 079 will reduce shelf life. Monitor intercoat adhesion throughout the production run. Mix fresh daily. Do not exceed additions of 2% by weight.

100 Thickening Agent:

Thickens the ink, yet the powder will not dramatically affect gloss. Monitor cure and adhesion of the 80 Series inks when using. Increased ink film thickness may result when printing more viscous inks. Use of 100 Powder will adversely affect weatherability. 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.

800 Initiator:

Developed to provide adhesion to selected materials. Improves water resistance and surface durability. Addition of 800 to any ink containing 070 thinner may reduce cure rates and shelf life. Mix daily; stir immediately. Do not exceed additions of 1% by weight.



Storage & Available Warranties

All UV 80 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 80 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.

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