

PPC Series UV Curable Ink System

The PPC Series was designed for use in many common container applications where direct printing is required. The PPC Series is suitable for use on treated HDPE, treated LDPE, treated Polypropylene, Styrene, PET and PVC. For some applications requiring PET, flame treatment may be necessary to achieve acceptable adhesion. For some PVC 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:

- One Part
- Multiple Substrates
- Chemical Resistant
- Quick Curing
- Superb Gloss
- High Definition
- No Additives Required
- Excellent Intercoat

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 PPC-070 Thinner or PPC-049 Over-print Clear can be used to thin the ink.

Do not microwave this product.

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.

Coverage:

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

Cure Parameters:

Norcote® PPC 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. Minimum cure requirements are 300 mJ/cm² @ 600 mW/cm². Ink should be cured immediately after printing.

Curing Equipment:

PPC 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 PPC Series is a non-visual post-curing system. Although further cross-linking occurs up to 24 hours later, the PPC 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 containers is recommended for optimum performance. The majority of PET, PVC and Styrene materials will not require flame treatment.

Intercoat Adhesion:

PPC 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.



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Mixing:

All Norcote® PPC Series colors are intermixable.

Chemical Resistance:

The PPC Series inks have been exposed to a variety of chemicals to determine chemical resistance. PPC Series inks have proved to resist most common chemicals when properly cured. For details contact the Technical Service Department.

Water Resistance:

If water resistance is required, a crosshatch 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.

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 Safety Data Sheet.

Additives:

Check the Norcote® Additives list for the products compatible with this ink series. The list is available on our website at www.norcote.com or call us at 800-488-9180 to receive a copy.

Metallics:

Most metallic pigments work well with the PPC-000 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 PPC Series ink mixtures. **RECOMMENDATION: Mix only enough metallic ink for one day.**

Recommended mixing ratios are (by weight):

040 Gold Paste:	up to 20%*
042 Silver Paste:	up to 8%
044 Red Gold Paste:	up to 20%
046 Copper Paste:	up to 15%
038 Silver Powder:	up to 15%
240 Liquid Gold:	up to 30%
243 Silver Metallic:	up to 30%

Select mesh with openings large enough to transfer the metallic pigment of choice; generally a mesh count of 195-305 PW are recommended.

Using Metallics:

Metallic pigments will reduce the shelf life of ink mixtures. Actual shelf life will depend upon individual users conditions. As a general rule it is recommended to only mix enough metallic ink for one day.

040 Gold Paste*
 042 Silver Paste
 044 Red Gold Paste
 046 Copper Paste
 038 Silver Powder
 240 Liquid Gold
 243 Silver Metallic

**040 Gold Paste should be stored between 64°-95°F (18°-35°C) to avoid solidification. If this occurs, reliquify the paste by placing it in an area with a temperature of 77°-95°F (25°-35°C)*



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Color Range:

Custom and specific colors can be matched at Norcote® with customer supplied print sample, wet ink sample, Pantone® numbers as well as other recognized standards.

Standard Colors:

PPC-012	Radiant Yellow•
PPC-016	Brilliant Orange•
PPC-017	Medium Yellow
PPC-019	Permanent Orange•
PPC-021	Cha-Cha Red
PPC-022	Red
PPC-023	Rhodamine Red
PPC-024	Rose
PPC-030	Emerald Green
PPC-031	Spruce Green
PPC-034	Permanent Blue
PPC-035	Violet
PPC-037	Reflex Blue
PPC-2313	Lightfast Yellow
PPC-2872	Lightfast Orange

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

Whites, Blacks & Clears:

PPC-002	Mixing White
PPC-1046	Opaque White
PPC-1056	Non-Chalking Opaque White
PPC-1057	Nano-Opaque White
PPC-005	Mixing Black
PPC-1019	Opaque Black
PPC-4000	Jet Black
PPC-000	♦ Mixing Base
PPC-049	Overprint Clear
PPC-060	Halftone Base

Fluorescent Colors/JZB's:

Fluorescent colors are available upon request. Fluorescent pigments are not lightfast beyond 60-90 days even with an overprint clear. For maximum brightness and color stability 230-260 plain weave monofilament mesh counts are recommended.

T-Powders are available as well. For further information please contact Norcote International Inc. 800-488-9180

♦PPC-000 Mixing Base:

Caution, this product is very reactive to fluorescent and incandescent light when not mixed into a pigmented ink. The ink can set up within 10-15 minutes. Store properly away from light sources. The PPC-000 should be added into pigmented ink. This product increases cure and adhesion rates.



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Storage & Available Warranties:

All UV PPC 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). Do not freeze. Do not store ink below 32F. 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 until the expiration date shown on the product label. **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 cannot 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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