

### Suggested Uses:

The PST Series was designed for use in many container applications. It works particularly well on treated LDPE soft bottles, treated HDPE and Polypropylene as well as Styrene, treated and untreated PET and PVC. **It is the responsibility of the end user to pretest all substrates with Norcote® products prior to use in production.**

### Product Features

- Excellent Adhesion
- Quick Curing
- Superb Gloss
- Low Static
- Superb Gloss
- Excellent Scratch Resistance
- Chemical Resistance

### 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 PST-070 Thinner can be used to thin the ink.

### Mesh:

A mesh count of 355 threads per linear inch and higher (140/cm) low elongation, monofilament polyester is suggested. Tension should range from 18-25 N/cm<sup>2</sup> 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® PST 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:

PST 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. The minimum UVA energy is 130 mJ/cm<sup>2</sup> at 1.5 revolutions.

### Adhesion:

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

PST 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® PST Series colors are intermixable.

## Chemical & Water Resistance:

The PST Series inks have been exposed to a variety of chemicals to determine chemical resistance. PST Series inks have proven to resist most common chemicals when properly cured. For better results the 800 Initiator or WRA-172 may be added. Test thoroughly for conformance to your specific water resistance requirements.

## Metallic Colors:

Most metallic pigments work well with the PST-060 Halftone Base. 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 PST Series ink mixtures. RECOMMENDATION: Mix only enough metallic ink for one day.

## Static Elimination:

The PST Series inks are static free in normal conditions. However, 070-Thinner or 170-Anti-Stat Gel may be added for reducing static when climate condition changes.

## 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:

Mixing White	002
Opaque White	1046
Mixing Black	005
Opaque Black	1019
Brilliant Yellow	016
Medium Yellow	017
<b>Permanent Orange</b>	<b>019 •</b>
Red	022
Rhodamine Red	023
Rose	024
Emerald Green	030
Spruce Green	031
Permanent Blue	034
Violet	035
Reflex Blue	037
Overprint Clear	049
Halftone Base	060

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

## 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.

## Halftone Inks:

HT Process Cyan	080
HT Process Magenta	081
HT Process Yellow	082
HT Process Black	083



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## Key Additives

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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.

### **PST-070 Thinner:**

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

### **278-Adhesion Modifier:**

The 278 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.

### **100 Thickening Agent:**

This powder will thicken the ink, yet will not dramatically affect the gloss. Monitor cure and adhesion of the PST 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.

### **800 Initiator:**

Developed to provide adhesion to selected materials. 800 Initiator will also improve water resistance and surface durability. Addition of 800 to any inks containing 070 Thinner may reduce cure rates and shelf life. Mix inks fresh daily. Stir immediately. Do not exceed additions of 1% by weight.

### **WRA-172:**

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



## Storage & Available Warranties

All UV PST 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 PST 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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