# Norcote Technical Bulletin



## LED MSK Series Second Surface LED Curable Ink System

### Suggested Uses:

The LED MSK was designed for use where second printing is required. The LED MSK series inks are suitable for use in many industrial graphic applications and are compatible with most pressure sensitive adhesives.

For additional information, please contact Technical Service. It is the responsibility of the end user to pretest all substrates with Norcote<sup>®</sup> products prior to use in production.

#### **Product Features**

- Adhesive compatible
- Quick curing
- Excellent adhesion
- One part

### **Recommended Substrates:**

- Polycarbonate
- Polyester (Treated)

#### **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 LED MSK-070 Thinner or LED MSK-000 Clear can be used to thin the ink. Do not microwave this product. Note that very high or low temperatures can change the ink's viscosity. This in turn can affect flow properties, print definition and the color opacity of the ink.

#### Mesh:

A mesh count of 305 threads per linear inch and higher (120 cm<sup>2</sup>) 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 (15-25 $\mu$  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.

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#### **Curing Parameters:**

Curing speeds depend on several factors including ink film thickness, energy level of the lamps and distance to the substrate. Norcote LED MSK inks will cure using:

- 8-12 watt/cm LED units
- 395 nm light source

Always test the inks under your printing conditions.

#### **Adhesion:**

The LED second surface series is a nonvisual post-curing system. Although further cross-linking occurs up to 24 hours later, the inks should pass a crosshatch tape test, (ASTM #D3359-97), using 3M 600 tape after exiting the curing unit and cooling to room temperature.

#### **Intercoat Adhesion:**

The LED MSK second surface 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, squeegee durometer and other press variables.

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#### **Die-Cutting/Embossing:**

LED MSK series inks are very flexible, providing excellent results under most embossing or die-cutting conditions. To obtain acceptable results, inks must pass a cross-hatch tape test before embossing. Inks with special effects pigments may not emboss easily. High stress embossing of metallic ink is not recommended.

#### **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 Clear	LED MSK-000
Overprint Clear	LED MSK-049
Mixing White	LED MSK-002
Opaque White	LED MSK-1046
Mixing Black	LED MSK-005
Opaque Black	LED MSK-1019
Radiant Yellow	LED MSK-012 •
Medium Yellow	LED MSK-017
Permanent Orange	LED MSK-019 •
Radiant Orange	LED MSK-020 •
Opaque Yellow	LED MSK-2233
Lightfast Yellow	LED MSK-2313
Lightfast Orange	LED MSK-2872
Red	LED MSK-022
Rhodamine Red	LED MSK-023
Rose	LED MSK-024
Magenta	LED MSK-026
Emerald Green	LED MSK-030
Spruce Green	LED MSK-031
Permanent Blue	LED MSK-034
High Density Permanent Blue	LED MSK-434
Opaque Process Blue	LED MSK-2021 *
Violet	LED MSK-035
Reflex Blue	LED MSK-037
Peacock Blue	LED MSK-038 *
Process Blue	LED MSK-050 *

- May not be suitable for lightfast applications and is not recommended for prolonged exposure to direct sunlight.
- \* Special lead times will apply

#### **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.

#### Storage & Available Warranties

All LED MSK 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 freezing. Do not store ink below 32° F. 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 LED MSK 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.

> Revision: 12/26/2014 Supersedes: 11/11/2014

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