Suggested Uses:
The MSK Series is recommended for second surface decoration of polycarbonate and many polyesters (print-treated and top-coated) for use as membrane switch overlays, nameplates and other select applications, especially when adhesives are to be applied. (*Note pg. 4) It is the responsibility of the end user to pretest all substrates with Norcote® products prior to use in production.

Product Features
- Extremely Flexible
- Embossable
- Excellent Adhesion
- Very Opaque
- Outstanding Print Definition
- Good Intercoat Adhesion

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 MSK-070 Thinner or MSK-049 Clear can be used to thin the ink. Do not microwave this product.

Mesh:
A mesh count of 355-390 threads per linear inch (140-150 cm⁻¹) 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:
The MSK Series clears are fast curing and work well with one 300 watts/in (120 watts/cm) or two 200 watts/in (80 watts/cm) focused medium pressure mercury vapor lamps with millijoules (mJ) and milliwatts (mW) of:
200 mJ/cm² @ 600+mW/cm² min. for most colors and clears
300 mJ/cm² @ 600+mW/cm² minimum for opaque colors (ie blacks, whites, tans, greys, metallics, etc).

These guidelines are meant to be a starting point only. Curing requirements vary depending on ink film thickness, substrate type, substrate color/background color, curing system, reflector type etc. Testing should always be performed under actual production conditions to determine suitability.

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 2,200 square feet per gallon (200 square meters per gallon) depending on printing variables affecting ink film thickness and coverage.

Mixing:
All Norcote® MSK Series colors are intermixable. Addition of any other ink series will impair MSK Series flexibility and may impair long term adhesion.

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.
**Adhesion:**
The MSK Series is a nonvisual post-curing system. Although further cross-linking occurs up to 24 hours later, the MSK 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. Pressure sensitive adhesives should be applied after a 24 hour post-cure for best results.

**Intercoat Adhesion:**
MSK Series inks intercoat adhesion is exceptional. Although loss of intercoat adhesion is difficult, it should be monitored throughout the production run especially when printing 8 or more passes.

**Weatherability:**
MSK Series inks are NOT weatherable.

**Die-Cutting/Embossing:**
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.

**Metallic Colors:**
Most metallic pigments and dark colors work well with the MSK-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 MSK Series ink mixtures. RECOMMENDATION: Mix only enough metallic ink for one day.

**Process Colors:**
MSK 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, use a minimum stencil thickness.

**038 Silver Powder:**
038P is a coated powder that is meant to line up the silver particles at the bottom of a printed and cured ink film. It is for second surface applications only. The 038 requires gentle mixing. It is best mixed by hand. Avoid dispersion using (toothed) mixing blades on mixers. It should be mixed with MSK-000 Mixing Clear not to exceed 15% by weight. Thoroughly mix the powder into the Clear. Ability to cure a suspension is related to pigment load and UV exposure. Use mesh counts of 305 tpi (120/cm) or lower when printing a metallic mixture. Adhesion and inter-coat adhesion to the substrate should be monitored throughout the production run. Higher percentages of metallic pastes can decrease adhesion and intercoat adhesion properties. Mix ink fresh daily. Keep the container away from direct and indirect light and heat. The lid should always be tightly secured.

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

**Standard Colors:**
- Mixing Clear: 000
- Overprint Clear: 049
- Ultimate Clear: 249
- NY (non-yellowing) Super Clear: 259
- Lens Clear: 1085
- Improved Lens Clear: 2085
- Mixing White: 002
- Opaque White: 1046
- Non-Chalking White: 1054
- Non-Chalking Opaque White: 1056
- Non-Yellowing White: 1059
- Hi Speed Opaque White: 1066
- Signature Panel White: 1183
- H.V. Opaque White: 1593
- Mixing Black: 005
- Opaque Black: 1019
- Midnight Black: 1020
- Deadfront Black: 1022
- Super Dense Black: 2500
- Super Dense Black: 4000
- Jet Black: 4100
- Brown: 007
- Radiant Yellow: 012
- Lightfast Yellow (Green shade): 015
- Medium Yellow: 017
- Permanent Orange: 019
- Radiant Orange: 020
- Opaque Yellow: 2233
- Lightfast Yellow: 2313
- Lightfast Orange: 2872
- Cha Cha Red (Special Order): 021
- Red: 022
- Rhodamine Red: 023
- Rose: 024
- Magenta: 026
- Emerald Green: 030
- Spruce Green: 031
- Permanent Blue: 034
- High Density Permanent Blue: 434
- Opaque Process Blue: 2021
- Violet: 035
- Reflex Blue: 037
- Peacock Blue: 038
- Process Blue: 050
- HF Green: 330
- HF Violet: 335

* Halogen free per the International Electrotechnical Commission standard IEC 61249-2-21.
* 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 Qts.
Process Magenta Toner 881 "
Process Yellow Toner 882 "
Process Black Toner 883 "
HD Process Cyan 9001
HD Process Magenta 9002
HD Process Yellow 9003
HD Process Black 9004

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 802
Horizon Blue 801
Pantone Yellow 803
Corona Magenta 21

Transparents: Qts. Only
Transparent Red 092
Transparent Green 093
Transparent Blue 094
Transparent Yellow 095
Transparent Green 193
Transparent Blue 194
Transparent Yellow 195 •
Transparent Orange 196 •
Deadfront Black 1122
Lt. LED Red 1186
Lt. LED Red 2286
Dk. LED Red 1187
Dk. LED Red 2287

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

Special:
ODMSK-2586-A2 Lightblock Ink
A mesh count of 305.33 PW is recommended. The ODMASK-2586-A2 works well with two 300 watts/in (120 watts/cm) focused medium pressure mercury vapor lamps.

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.

Metalics:
Silver Powder 038
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 18°C-35°C to avoid solidification. If this occurs, reliquify the paste by placing it in an area with temperatures of 25°C-35°C.

Textured Clears:
Matting Clear MSK-CL2
Low Texture Satin Finish MSK-CL6
Textured Clears have a 2 day lead time.

Note: Textured Clears have a shelf life of 1 year from the date of manufacture when stored under the proper conditions. Refer to storage and shelf life on page 1.

Storage & Available Warranties
All UV 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 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.

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