

Product Description:

The IGX Series is a UV curable screen printing ink that has been specifically designed to meet the demands of the Industrial Graphics Market, including automotive, white goods, and user interface applications.

The IGX Series features outstanding adhesion to many of the materials commonly used in Industrial Graphic applications, i.e. print treated polyester, polycarbonate, and polycarbonate blend films and displays superior inter layer adhesion where multiple exposure to UV energy is required. When processed as directed, the IGX Series exhibits excellent color strength, opacity, flexibility and is resistant to both tape and UV printable adhesives. The IGX Series can also be used in many IMD/IML applications. The IGX Series does not contain N-Vinyl-2-Pyrrolidone (NVP) and is VDA and RoHs compliant. **It is the responsibility of the end user to pretest all substrates with Norcote® products prior to use in production.**

Printing Recommendations:

The IGX Series is formulated to print from the container without the use of additives. Prior to printing, all colors should be well mixed. Excess ink from print runs should be kept in a separate container to avoid contamination. **Do not microwave this product.**

Mesh:

305 plain weave or higher mesh counts are recommended for opaque colors where two (2) lamp systems are used. 355.34 plain weave or higher mesh counts are recommended where one (1) lamp systems are used.

Stencil:

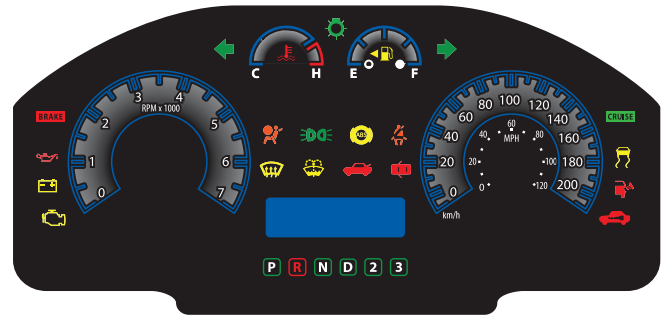
Direct or capillary emulsions that are UV compatible, with a micron thickness between 7-10 microns are recommended. Thicker stencils can be used based upon the ability to cure the increased ink deposit.

Squeegee:

Sharp 70-90 durometer polyurethane blade or multi-durometer blades can be used. For optimal ink lay down, a molded 80 durometer blade is recommended.

Thinner:

The IGX Series is supplied in print ready condition. For reduction of ink viscosity, the use of IGX-049 Clear is recommended.



Product Features:

- Tack Free Ink Surface**
- Robustness in Application**
- Embossable / Formable**
- Excellent Adhesion / Intercoat Adhesion**
- Compatible With most PSA's**

Coverage:

Approximately 2,000-3,000 square feet per gallon, depending upon ink deposit.

Cure & Adhesion:

Please see notes on page 2.

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.

Precautions:

Gloves and / or barrier cream is recommended when handling UV inks. Safety glasses are suggested, particularly for areas where ink may be splashed. If skin contact occurs, wash affected area with soap and water (do not use solvent or thinners).

Please see important warranty and testing information on page 4.

Cure and Adhesion:

Adhesion and/or cure was determined by use of a cross hatch tape test, following ASTM Standards F1842-09 and/or D3359, using 3M #600 tape. Test prints were tested after exiting the cure unit and cooling to room temperature (approximately five minutes). UV intensity/energy were measured with a calibrated EIT Power Puck II. On MacDermid polyester films and listed polycarbonate and polycarbonate blend films, adhesion was maintained after 11 exposures to UVA energy at 200 mJ/cm² and .800 mJ/cm² for each exposure. (When exposing Marnot® polyester films to UV energy more than five (5) times, it is recommended that the IGX-049 Clear is used as a primer coating to obtain adhesion for extended pass / exposures. Exposing MacDermid polyester films to UV energy more than 11 times may also require the use of the IGX-049 Clear to obtain further adhesion.)

Multiple exposures to excessive UVA energy (greater than five (5) exposures in excess of UVA 300 /cm² / 1.0 /cm² per exposure) may cause the loss of intercoat adhesion between colors and / or may lower the number of passes that is obtained on MacDermid print treated polyester films. Note: it is possible for opaque colors to pass a cross hatch tape test at low UV energy (<170 mJ/cm² / 500 mW/cm²), however, the cure may not be sufficient for other end use requirements, such as resistance to adhesives.

Materials Tested:

MacDermid Autoflex EGB187L (EBG77) Polyester
MacDermid Autoflex XE V207 (2V87XE) Polyester
MacDermid Autoflex EBG180L (EBG7) Polyester
Sabic 8010 Lexan® Polycarbonate
Bayfol® CR6-2 PC/PBT Blend

Flexibility - Emboss & Fatigue:

The IGX Series has been formulated with the flexibility required for standard embossing and die cutting without cracking or crazing of the printed ink film. Only inks that pass a cross hatch tape test should be embossed or die cut. When printed through a 355.34 plain weave mesh and exposed to the minimum cure requirements, the IGX Series displayed excellent flexibility when embossed. Tested has been conducted using multiple substrates, ink layers and emboss depth and types. In all tests conducted no cracking or crazing of the ink film was detected in any portion of the embossed area.

Using embossed test samples, the IGX Series have been evaluated for durability and resistance to fatigue when subjected to simulated switch actuations. When printed through a 355.34 plain weave mesh and exposed to the minimum cure requirements, the IGX Series displayed excellent durability and resistance to fatigue on a wide variety of substrates, including polycarbonate. In limited actuation evaluations, (both internal and external), the IGX Series has been subjected to over 1 million actuations with no observable defects on both polycarbonate and print treated polyesters.

Adhesive Resistance / Compatibility:

The IGX Series has been formulated to be compatible with standard PSA and UV curable printed adhesives commonly used in the Industrial Graphics Market. When printed through a 355.34 plain weave mesh and exposed to the minimum cure requirements, the IGX Series displayed excellent resistance to adhesive attack and subsequent delamination. The IGX Series also exhibited superior compatibility to the adhesives tested as displayed by shear strength values and point of separation observations.

Real time (up to 180 days) and accelerated (simulated 120 days) evaluations were conducted on polycarbonate and print treated polyester using multiple ink layers and cure/exposure parameters. For more information regarding adhesive testing and methods used, please contact Norcote's Technical Service Department.

Additives:

Standard additives offered by Norcote are not recommended for this ink series. Please contact Technical Service for information regarding the use of additives.

Metallics:

Metallic colors offered by Norcote ® work well when suspended into the IGX-049 Clear. Mesh selection should have open areas large enough to transfer the metallic particles through the screen without sifting. Generally, mesh counts of 305 or lower have shown the most consistent results. Metallic pigments will reduce the shelf life of the IGX Series inks to 4-8 hours.

038 Silver Powder:

The 038P is a type of coated powder that is meant to line up the silver particles at the bottom of a printed and cured ink film. Because of this, it is recommended for second surface applications only. This product requires gentle mixing. It is best mixed by hand. Avoid dispersion using (toothed) mixing blades on mixers. The 038 Silver Powder should be mixed with the IGX-000 Clear not to exceed 15% by weight. Be sure to thoroughly mix the powder into the Clear. Ability to cure a suspension is related to pigment load and UV exposure. Select mesh counts of 305 threads per inch (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 inter-coat adhesion properties. Mix ink fresh daily. Keep the container away from exposure to direct and indirect light and away from heat. The lid should always be tightly sealed.

Color Matching:

The IGX Series colors are available in both standard opaque colors and high density colors. For matching custom colors previously matched in solvent based ink systems, use of the high density colors is recommended. It is not recommended to use any of the Standard Transparent Colors in custom color matches. Transparent Contact Technical Service for more information. A colorant database for computerized color matching is available upon request.

Standard Opaque Colors

IGX-000 Metallic Mixing Clear

IGX-012 Radiant Yellow •

IGX-017 Medium Yellow

IGX-019 Permanent Orange •

IGX-021 Cha Cha Red

IGX-022 Red

IGX-023 Rhodamine Red

IGX-024 Rose

IGX-030 Emerald Green

IGX-031 Spruce Green

IGX-034 Green Shade Blue

IGX-330 HF Green *

IGX-335 HF Violet *

IGX-424 HD Rose

IGX-049 Overprint Clear

IGX-1019 Opaque Black

IGX-1046 Opaque White

IGX-1056 Non-Chalking Opaque White

IGX-1085 Ultimate Clear SR (scratch resistant)

IGX-1593 HV Opaque White

IGX-2233 Opaque Yellow

IGX-2313 Lightfast Yellow

IGX-2872 Lightfast Orange

IGX-4100 Dense Black

* 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.

Storage & Available Warranties:

All UV IGX Series ink 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 IGX 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 . 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.

Important Note:

The test results reported in this bulletin are merely representative of expected results when processed in a like manner and should not replace thorough testing and evaluation for suitability of the IGX Series by the end user (customer) based upon their specific parameters and requirements.

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 pre-test all substrates with the Products prior to use in production.

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