Glass (GL) Series
UV Curable Ink System

Product Features
- One part ink for basic adhesion
- Multiple types of glass
- Quick curing
- Excellent adhesion and scratch 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 GL-049 or GL-000 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:
Mesh counts of 305-355 threads per linear inch and higher (120-140 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.

Curing Parameters:
Curing speeds depend on several factors including ink film thickness and the energy level of the lamps. The GL series inks are fast curing and will work with one 300 watts/in (120 watts/cm). However, Norcote recommends two 300 watt/in (240 watts/cm) focused medium pressure mercury vapor lamps with millijoules (mJ) and (mW) of:
- 300 mJ/cm² @ 800 + mW/ cm² minimum for most colors and clears.
- 400 mJ/cm² @ 1,000 + mW/ cm² minimum for opaque colors (blacks, whites, tans, grays, metallics, etc.). For excellent adhesion results use belt speeds of 60 – 80 feet per minute.

Adhesion:
The GL series is a nonvisual post-curing system. Although further cross-linking occurs up to 24 hours later, the GL inks should pass a crosshatch tape test, (ASTM #D3359-97), using 3M 600 tape after exiting the curing unit and cooling to room temperature. In-line, direct flame treatment may promote adhesion on certain types of glass.

Intercoat Adhesion:
GL 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.
Mixing
All Norcote® GL Series colors are intermixable.

Metallic Colors:
Most metallic pigments work well with the GL-049 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 GL Series ink mixtures. RECOMMENDATION: Mix only enough metallic ink for one day.

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 Nor-Cote® against prints, wet ink or PANTONE® numbers.

Standard Colors:
Radiant Yellow  GL-012 •
Brilliant Yellow  GL-016 •
Permanent Orange  GL-019 •
Cha-Cha Red  GL-021
Red  GL-022
Rhodamine Red  GL-023
Rose  GL-024
Emerald Green  GL-030
Spruce Green  GL-031
Permanent Blue  GL-034
Violet  GL-035
Reflex Blue  GL-037
Primrose Yellow  GL-201
Lightfast Clm Orange  GL-214
Opaque Yellow  GL-223
Lightfast Yellow  GL-2313
Lightfast Orange  GL-2872

Whites, Blacks and Clears:
Mixing White  GL-002
Opaque White  GL-1046
Nano Opaque White  GL-1057
Mixing Black  GL-005
Opaque Black  GL-1019
Jet Black  GL-4100
Mixing Base  GL-000 ◊
Overprint Clear  GL-049

Fluorescent Colors T Powders:
Aurora Pink (Blue shade)  T-11
Rocket Red  T-13
Fire Orange  T-14
Blaze Orange  T-15
Arc Yellow  T-16
Saturn Yellow  T-17
Signal Green  T-18
Horizon Blue  T-19
Corona Magenta  T-21

Metallcs:
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.

◊GL-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 GL-000 should be added into pigmented ink. This product increases cure and adhesion rates.

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 UV GL 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 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 GL 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.