



TECHNICAL DATA SHEET

NAZDAR®

TECHNICAL INFORMATION AND APPLICATION INSTRUCTIONS

1200 SERIES UV COROPLUS SCREEN INK

CODE REF: 491

SUBSTRATES: 1200 Series is designed for treated corrugated polypropylene (correx) and some high density polyethylene sheeting with a surface tension at or above 46 dynes/cm.

END USES : For indoor and outdoor real estate, political, and bus sign applications, along with other P.O.P. applications – Not recommended for container, polyethylene banner, or nameplate applications.

PRODUCT INFORMATION

The 1200 Series UV Coroplus is a one part, 100% solids UV-curable screen printing ink which exhibits a high gloss finish in all colours. The ink series does not require a catalyst, thereby saving costly replacement of stained mesh and gelled ink due to shortened pot life.

The 1200 Series is intended to work well straight from the container on a wide range of printing equipment. The 1200 Series has been formulated for applications on treated corrugated polypropylene that require up to 12 months outdoor performance. Durability of a sign can typically be affected by under curing the ink, abrasive marring or cleaning of the print, poor surface treatment of the substrate, or the inability of the substrate to withstand degradation from sun, heat, or humid environmental conditions.

The 1200 Series film flexibility enables the finished sign to undergo bending, die cutting, hole punching, and stapling. The 1200 Series does **not** contain N-vinyl-2-Pyrrolidone (trade name V-Pyrol®).

APPLICATION INFORMATION

MESH 140-150T Monofilament polyester mesh is recommended for most applications.
120-165T Monofilament polyester can be used for specialty applications.

STENCIL Direct emulsions and thin capillary films that are solvent resistant, UV ink compatible, and yield a thin ink deposit will work best.

SQUEEGEE Sharp 70-90 single durometer polyurethane blades as well as multi-durometer blades that produce an even, thin ink deposit will work best.



GL Specialized Inks (Pty) Ltd

Registration No.: 1997/13081/007

PO Box 1026
Westville, 3630
SOUTH AFRICA

Tel: +27 (0)31 7006455
Fax: +27 (0)31 7006187
Website: www.gl-inks.com

Email: jay@gl-inks.com
Email: gordon@gl-inks.com

COVERAGE	60-100 Square metres/kilo depending upon ink deposit.
REDUCER	N660 S499 (previously D564 S082) UV Reducer is to be used to reduce the viscosity of these inks by adding no more than 5% by weight. It is recommended that these inks be thoroughly mixed, and acclimatized to a 18°C-30°C environment prior to reducing.
MIXING CLEAR	Mixing Clear is used to reduce the density of colours, or as a clear base for metallic powders (refer to Metallic Colours mixing Guidelines later in this TDS).
CLEAN UP	Use UV Screen Wash N574 S1032 (previously D574 S032).
STORAGE	These inks are reactive to light and temperature extremes. Store in a clean area below 35°C sealed tightly in dark plastic containers out of direct sunlight. For maximum shelf life, store ink in ambient temperatures of 15°C to 30°C. Ink taken from the press should not be returned to the original container; store separately to avoid contaminating unused ink.

GENERAL GUIDELINES

INK HANDLING	Direct contact with the skin is the primary route of exposure and irritation with UV inks. Therefore, it is recommended that all personnel mixing and handling these products wear gloves and barrier cream to prevent direct skin contact. Safety glasses are suggested in areas where ink may be splashed. If ink does come in contact with skin, wipe ink off with a clean, dry absorbent cloth or rag (DO NOT USE SOLVENT OR REDUCER). Proceed to wash and rinse the affected area with soap and water. Consult the 1200 MSDS for further instructions and warnings.
PRINTING	1200 CoroPlus Inks are formulated to print from the container with excellent flow characteristics. If the need arises to reduce the viscosity, add 2-5% of N660 S499 UV Reducer. The use of a mixer is recommended to thoroughly mix inks prior to printing. Inks will maintain optimum print and cure performance when the ink temperature is 18°C - 30°C. Temperatures below 18°C will increase the ink viscosity, impairing both flow and cure. Elevated temperatures will lower the ink viscosity, reducing print definition, film thickness and opacity. When the ink is cold, it is best to mix the ink with a high-speed mixer until it returns to the proper temperature, 18°C - 30°C. Add reducer at this point if necessary.
CURE PARAMETERS	<p>The 1200 CoroPlus Inks are formulated to cure when exposed to a focused medium pressure mercury vapour lamp set at 200 watts per inch as a belt speed of 15-18 metres per minute. The Halftone Inks are designed to cure under the energy output emitted by typical in-line presses.</p> <p>The most accurate means of determining the ultraviolet energy output of specific equipment is to measure the light output with a radiometer. For printers using radiometers and/or using equipment where ultraviolet dosage is determined by means other than a belt speed, contact your GL Technical Representative for a suggested level of ultraviolet energy exposure required to cure the 1200 Series Inks on specific equipment.</p> <p>These inks can be affected by stray UV light in and around a printing facility resulting in the appearance of ink drying in the screen during the course of a long run. Be aware of skylights, windows, and overhead lights possibly curing the ink in the screen. Precautions include the use of light filters that block out the damaging wavelengths.</p>
ADHESION TESTING	<p>Even when recommended UV energy output levels are achieved, it is imperative to check adhesion on a cooled down print by checking:</p> <ol style="list-style-type: none">1. Touch of ink surface – The 1200 ink will be smooth and soft.2. Thumb twist – The ink surface will not mar or smudge.

ADHESION TESTING (cont'd)

3. Scratch surface – The 1200 ink will resist scratching when cool.
4. Cross hatch tape test – Use a cross hatch tool, or a sharp knife to cut through ink film only, then apply 3M #600 clear tape on a cut area, rub down and rip off. Ink should only come off in actual cut areas.

The properly cured ink film will withstand normal water exposure, i.e. a rainy day. However, abrading the ink film while wet may result in ink delamination. Do not expose stacks of printed materials to water; printed materials must be stored in a dry area.

COLOUR AVAILABILITY

For the US market NAZDAR has a range of PMS matching colours available, as well as a selection of popular spot colours, 2 or more ranges of Process Colours and a range of single pigment toners.

The demands of the SA market are very different and at GL we hold stocks of the Black and White and a small selection of popular corporate colours. All other colours are quickly blended in our factories to customer specific requirements.

WEATHERABILITY

The 1200 Series has been formulated for applications on treated corrugated polypropylene that require up to 12 months outdoor performance. Durability of a sign can typically be affected by under curing the ink, abrasive marring or cleaning of the print, poor surface treatment of the substrate, or the inability of the substrate to withstand degradation from sun, heat, or humid environmental conditions.

METALLIC COLOURS

Recommended meshes for printing metallics are 120-140T plain weave monofilament polyester. Mix only enough metallic ink to be used the same day – Chemical reactions in metallic inks may result in viscosity, colour and printability changes over time. Check curing – Metallic colours are possibly more difficult to cure.

When inks are to be printed over a metallic colour, the overprinting ink(s) must be evaluated for intercoat adhesion over the metallic colour before proceeding with the production run. To maximize intercoat adhesion over metallic colours, we recommend that the metallic be printed as late as possible in the print sequence.

Recommended ratios: Metallic Powders

Silvers (aluminium) 8% by weight – 80gms powder to 1kg Clear
Gold (bronze) 15% by weight – 150gms powder to 1kg Clear

ADDITIVES

NB80 Adhesion Promoter may be added to the 1200 Series to further enhance adhesion and water resistance. Improved adhesion will not be demonstrated for 24 hours, with full cross linking in 4-7 days. Catalyzed Ink will have a 6-8 hour pot life.

SUBSTRATES

Never re-use a sign and print on the reverse side. The treatment level necessary for adhesion is destroyed very quickly under outdoor exposure.

TROUBLESHOOTING GUIDE:**INK NOT CURING**

Check for proper mesh count.

Check squeegee pressure, angle and sharpness. Too much pressure or a dull edge blade will significantly affect ink film thickness and cure.

Check UV unit for effective millijoules and milliwatts (UV output).

Colour may be too opaque for UV light to penetrate. This can occur when a colour match requires the use of opaque white or black. Reduce the opaque colour with the addition of Mixing Clear until effective cure is obtained.

POOR ADHESION

Excess ink deposit causing poor through-cure.

Surface contamination on substrate. Wipe a section of the substrate with isopropyl alcohol prior to print, and check adhesion.

Try another type or batch of substrate.

Insufficient cure.

A large, bold, black, sans-serif word "CAUTION" is oriented diagonally from the bottom-left towards the top-right. It is set against a light gray rectangular background that is part of a larger graphic element on the left side of the page.

Please proof this ink, reduced to the consistency you wish to adopt, on a sample of the ACTUAL SUBSTRATE you will be printing BEFORE starting a production run.

Give the proof 4 hours to post cure then check for: Abrasion resistance, adhesion, print appearance and correctness of colour. The adequacy of this ink in these properties cannot be fully established on laboratory equipment on a small scale.

GL stands behind the quality of this product. GL cannot, however, guarantee the finished results because GL exercises no control over individual operating conditions and production procedures. While technical information and advice on the use of this product is provided in good faith, the User bears sole responsibility for selecting the appropriate product for their end-use requirements. Users are also responsible for testing to determine that our product will perform as expected during the printed item's entire life-cycle from printing, post-print processing, and shipment to end-use. This product has been specially formulated for screen printing, and it has not been tested for application by any other method. Any liability associated with the use of this product is limited to the value of the product purchased from GL.

Based on information from our raw material suppliers, these products are formulated to contain less than 0.06% lead. If exact heavy metal content is required, independent lab analysis is recommended.

LAST DATE AMENDED: 12 October 2006