



# TECHNICAL DATA SHEET

NAZDAR®

## TECHNICAL INFORMATION AND APPLICATION INSTRUCTIONS

### UV POINT-OF-SALE SCREEN INK 3200 SERIES

CODE REF: 493

**SUBSTRATES:** Styrene, rigid PVC, vinyls, acrylics, some coated papers, and some coated cardstocks.

**END USES :** For Point-of-Sale applications on a wide range of plastics, coated papers, and coated boards that will be used for indoor and outdoor advertising.

### PRODUCT INFORMATION

The 3200 Series UV POS Screen Ink has been formulated to meet the processing speeds of the most modern printing equipment, while curing at low levels of ultraviolet energy, reducing costs and substrate heat exposure. This ink will cure to a tough, glossy finish that will resist blocking in two-sided print applications on rigid plastics.

The 3200 Series is a one part, 100% solids ultraviolet curable screen printing ink which exhibits a high gloss finish in all colours except for the halftone and fluorescent colours which will have a semi-gloss and satin finish respectively when cured. This ink is intended to work well straight from the container on a wide range of printing equipment. The 3200 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.

**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.



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**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). Use Process Medium in process colours to maintain structure.

**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 3200 MSDS for further instructions and warnings.

**PRINTING**

3200 POS 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**

The 3200 Series POS Inks are formulated to cure when exposed to a medium pressure mercury vapour lamp set at 200 watts per inch at a belt speed of 25-30 metres per minute. 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 Rep for suggested levels of ultraviolet energy exposure required to cure the 3200 Series Inks on specific equipment. These High Performance Inks can be affected by stray UV light in and around a printing facility resulting in the appearance of an 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.

**ADHESION TESTING**

Even when recommended UV energy output levels are achieved, it is imperative to check adhesion on a **cooled down** print by checking:

1. Touch of ink surface – The 3200 will be smooth and slick.
2. Thumb twist – The ink surface will not mar or smudge.
3. Scratch surface – The 3200 will resist scratching when cool. Some soft vinyls scratch easily, so use magnification to determine if scratches are ink only or ink and the top layer of vinyl.
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.

Full adhesion characteristics will be demonstrated within 4 hours after cure.

**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 Process Colours and a small selection of popular corporate colours. All other colours are quickly blended in our factories to customer specific requirements.

**FLUORESCENT COLOURS**

Fluorescent colours are made on request – These colours require special consideration due to their high pigment content. Best results are obtained when printing through a mesh, 120-140 that offers more open area. These inks will have a tendency to settle, so high speed mixing is required prior to printing. The cured ink will have a satin finish. Fluorescent colours will fade on exposure to ultraviolet light – this includes UV reactor exposure as well as outdoor exposure. It is recommended to adjust the art-work so that these colours are the last printed on the image.

**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 more difficult to cure.

**Recommended ratios: Metallic Powders**

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

Gold (bronze) 15% by weight – 150grms powder to 1kg Clear

**FINISHING**

The excellent adhesion and hard surface finish of the 3200 POS Inks allow the stacking of printed sheets, ink to ink, without blocking problems on most substrates.

**ADDITIVES**

N690 S463 NB80 is recommended to be added at a level of 5% by weight in the 3200 Series Inks to further enhance adhesion on rigid high density polyethylene and treated fluted polypropylene substrates. Improved adhesion will not be demonstrated for 24 hours, with full cross linking in 4-7 days.

Ink mixed with N690 S463 NB80 will have a 4-8 hour pot life.

**POST FINISHING**

The 3200 Series POS Inks will die cut without chipping, provided good adhesion to the substrate is achieved. Multiple layers of ink should be tested prior to production printing

**SUBSTRATES**

1. Styrene – On light gauge styrene multiple passes under the UV Curing Unit can cause embrittlement of the substrate and cracking. If this occurs, reducing the curing time for all except the last colour (faster belt speed) can overcome the problem. Alternate solutions are Satin Finish 3500 Inks – Excellent flexibility, somewhat slower curing, and must be Satin Finish to prevent blocking under the heavy pressure of a stock of styrene. The new 1800 and 1710 PowerPrint Series, again in Satin Finish, are also suitable.
2. Paper and Card stocks – Coated grades are recommended. Avoid the use of uncoated stock, as it may allow the ink to penetrate too deeply into the substrate – This results in poor curing and high odour levels. Consider also 1600 Series as this is more economical.
3. Flexible Vinyl – 3200 Inks are not sufficiently flexible to permit the 180° folds required for sewing on banners. For this application, 3900 Series is recommended.
4. Correx Board, Chromadeck, HDPE – 3200 Series does not have good adhesion, however, it has been found that the addition of 5% N690 S463 NB80 Catalyst to the ink prior to printing, enables good adhesion and outdoor durability to be achieved in most cases (refer Printing notes on Page 2).
5. For maximum outdoor durability, it is recommended that the inks be overvarnished.

**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 resulting in 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.

**NOTE**

The 3200 Series has been formulated to render exceptional performance on a wide variety of substrates; however, due to variables in the chemical make-up of some substrates from batch to batch, a thorough test relative to all performance characteristics should be conducted prior to production printing. For further assistance please call GL SPECIALIZED INKS: +27 (0)31 7006455

**CAUTION**

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.