Nazdar 3800 UV Screen Ink Series

NAZDAR
INK TECHNOLOGIES

3800 Series Poly Banner UV Screen Ink has been formulated specifically for indoor and outdoor treated polyethylene banner applications, where excellent adhesion and superior flexibility are required. Properly cured, this ink will resist blocking when stacked ink to ink.

Substrates

- Treated polyethylene banner
  (45 dynes or higher)

Substrate recommendations are based on commonly available materials intended for the ink's specific market when the inks are processed according to this technical data. 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. Reference the 'Quality Statement' at the end of this document.

User Information

Mesh

355-420 tpi (140-165 tpcm) with a mesh opening of 22-38 um monofilament polyester mesh for most applications.

305-355 tpi (120-140 tpcm) monofilament polyester mesh can be used for specialty applications with the mesh opening appropriate to the effect *(i.e. pearlescents, aluminums, etc.).*

Coarser mesh counts and/or twill weave result in heavier ink deposit and may require additional cure output.

Stencil

Use direct emulsions and capillary films which are solvent resistant and UV compatible.

Squeegee

70-90 durometer polyurethane squeegee.

Coverage

Estimated 2,500 – 3,800 square feet (232 - 353 square meters) per gallon depending upon ink deposit. Reference www.nazdar.com for examples of coverage calculations.

Printing

3800 Series is formulated to be press ready. Thoroughly mix the ink prior to printing. Improper mixing can lead to inconsistent color and ink performance.

Maintain ink temperature at 65°-90°F (18°-32°C) for optimum print and cure performance. Lower temperatures increase the ink viscosity, impairing flow and increasing film thickness. Elevated temperatures lower the ink viscosity, reducing print definition and film thickness.

Pretest to determine optimum printing parameters for a particular set of ink, substrate, screen, press, and curing variables/conditions.

The ink can be affected by stray UV light. Be aware of skylights, windows and overhead lights curing the ink in the screen; light filters are recommended. Leaving a container uncovered may result in the ink's surface forming a "skin", caused by reaction with ambient lighting. Keep containers covered.

Nazdar does not recommend inter-mixing of 3800 Series with other inks besides the 3800 Series.

Cure Parameters

3800 Series cures when exposed to a single medium pressure mercury vapor lamp emitting output millijoules (mJ) and milliwatts (mW) of:

100-130 mJ/cm² @ 600+ mW/cm²
for most colors

150-180 mJ/cm² @ 600+ mW/cm²
for 3878, 3879

These guidelines are intended only as a starting point for determining cure parameters, which must be determined under actual production conditions. "Undercuring" the ink may result in poor adhesion, lower block resistance, reduced durability, and higher residual odor. "Overcuring" the ink may reduce the flexibility of the printed part and adhesion of subsequent ink layers.

To increase mJ levels, slow down the belt speed or scan speed. To increase mW levels, increase the wattage setting of the UV reactor. To optimize mJ and mW output, maintain the bulb and reflector, and ensure proper focus to the substrate.

These guidelines are representative of measurements taken using an EIT® UVICURE® Plus radiometer measuring the UVA bandwidth (320-390 nm). To obtain accurate mW readings with

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the UVICURE® Plus, reduce the belt speed to less than 40 ft/min.

Clears / Varnishes

Mixing Clear/Metallic Mixing Clear: Use 3826 Mixing Clear to reduce the density of colors.

Common Performance Additives

The market specific performance properties of the 3800 Series should be acceptable for most applications without the need for additives. When required, any additives should be thoroughly mixed before each use. Prior to production, test any additive adjustment to the ink. Inks containing additives should not be mixed with other inks.

Example for additives- Ink at 100g with 8% of an additive is calculated as:

$$100g \text{ ink} + 8g \text{ additive} = 108g \text{ total}$$

Reducer: Use RE308 UV Reducer to reduce the viscosity of these inks. Add up to 10% by weight. Over reduction can reduce print definition, film thickness and adversely affect cure.

Cleanup

Screen Wash (Prior to Reclaim): Use IMS201 Premium Graphic Screen Wash, IMS203 Economy Graphic Screen Wash, or IMS206 Graphic Auto Screen Wash.

Press Wash (On Press): Use IMS301 Premium Graphic Press Wash.

Storage

Store closed containers at temperatures between 65°-78°F (18°-25°C). Ink taken from the press should not be returned to the original container; store separately to avoid contaminating unused ink.

Processing

Finishing: The adhesion and flexibility benefits of 3800 Series Ink allow for folding, sewing, and grommeting through the ink layer.

Mounting: When a printed banner is to be mounted outside, it is important to secure all four corners of the banner. Abrading the printed banner while wet from rain may result in ink delamination.

General Information

Ink Handling

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 cloth (do not use solvent or reducer). Wash the affected area with soap and water. Consult the applicable Safety Data Sheet (SDS / MSDS) for further instructions and warnings.

This ink series is a one-part, 100% solids UV-curable screen printing ink and does not contain N-vinyl-2-pyrrolidone (trade name V-Pyrol®).

For assistance on a wide range of important regulatory issues, consult the following Regulatory Compliance Department link at http://www.nazdar.com or contact Nazdar Ink Technologies - World Headquarters (see contact listing at the end of this document).

Adhesion Testing

Even when recommended UV energy output levels are achieved, it is imperative to check the degree of cure on a **cooled down** print:

1. Touch of ink surface – the ink surface should be smooth.
2. Thumb twist – the ink surface should not mar or smudge.
3. Scratch surface – the ink surface should resist scratching.
4. Cross hatch tape test – per the ASTM D-3359 method, use a cross hatch tool or a sharp knife to cut through ink film only; then apply 3M #600 clear tape on cut area, rub down, and rip off at a 180 degree angle. Ink should only come off in actual cut areas.

Full adhesion characteristics at proper cure levels are demonstrated within 4 hours.

Manufacturer's Product Offering

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

Halftone Colors

Halftone Extender Base is used to reduce the density of any of the halftone colors.

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Nazdar 3800 UV Screen Ink Series

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v 14 EN

Ref: v 13 EN

Standard Halftone Colors are formulated with hues and densities common to the graphic industry.

Dense Halftone Colors are formulated with increased densities over the Standard Halftone colors and are designed for printers who want to have the latitude to adjust the density levels.

Printing Colors

Printing Colors have excellent opacity and flow characteristics. These colors are intended to be printed as supplied.

Pantone Matching System® Base Colors

Pantone Matching System Base Colors are used to simulate the Pantone® Formulation Guide. These inks are press ready, can be used in matches to achieve Pantone color simulations, or let down with mixing clear. ColorStar® Color Management System software uses Pantone Matching System Base Colors to match Pantone colors. Blend formulations are also available at www.nazdar.com using ColorStar On-Line.

60 Series Colors: 3861-3869 colors have a high pigment concentration. These colors are formulated to have some white pigment or opaque pigment to increase opacity.

Special Effect Pigments

When inks are to be printed with a special effect color, all ink layers must be evaluated for intercoat adhesion before proceeding with the production run. To maximize intercoat adhesion, specialty colors should be printed as late as possible in the print sequence.

Pigments may settle in the container; prior to printing, thoroughly mix the ink.

The following special effect pigments may be added to 3800 Series. Contact Nazdar for the item number(s) and availability of special effect products. Technical Data Sheets for each of the following special effect pigments can be found at www.nazdar.com.

Metallic Silver (aluminum): Add up to 8% by weight.

Metallic Gold (bronze): Add up to 15% by weight.

Chemical reactions in metallic inks may result in viscosity, color and printability changes over time;

due to this, mix only enough metallic ink to be used the same day.

Pearlescent / Interference: Add up to 20% by weight.

Multi-Chromatic: Add up to 10% by weight.

Color Card Materials

The following is a list of available screen printed sample literature representing 3800 Series.

UV Color Card (CARDUV): shows the Standard Printing Colors, Pantone Matching System Base Colors, and Halftone Colors.

Special Effects Color Card (CARDSPL): shows various special effect pigments mixed with clear.

Packaging / Availability

Contact your Nazdar distributor for product availability and offering.

Standard Ink Items

Standard ink items listed below are inventoried in gallon containers.

Halftone Colors

Item Number	Color
3890	Halftone Extender Base
3891	Halftone Cyan
3892	Halftone Magenta
3893	Halftone Yellow
3894	Halftone Black
38101	Halftone Cyan Dense
38102	Halftone Magenta Dense
38103	Halftone Yellow Dense
38104	Halftone Black Dense

Standard Printing Colors

Item Number	Color
3819	Fire Red
3826	Mixing Clear
3879	High Intensity Black

Pantone Matching System® Base Colors

Item Number	Color
3858	Tinting White
3859	Tinting Black
3861	Yellow
3862	Warm Red
3863	Rubine Red

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3864	Rhodamine Red
3865	Purple
3866	Violet
3867	Reflex Blue
3868	Process Blue
3969	Green

Non-Standard Ink Items

Non-Standard ink items listed below are special order, non-inventoried colors which may require additional lead time. These items are available in gallon containers.

Printing Colors

Item Number	Color
3811	Lemon Yellow
3820	Brilliant Orange
3875	Super Opaque White

Additives / Reducers

Item Number	Item Description
RE308	UV Reducer

Cleaners / Clean Up

Item Number	Item Description
IMS201	Premium Graphic Screen Wash
IMS203	Economy Graphic Screen Wash
IMS206	Graphic Auto Screen Wash
IMS301	Premium Graphic Press Wash

Nazdar Quality Statement

Nazdar® stands behind the quality of this product. Nazdar® cannot, however, guarantee the finished results because Nazdar® 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 Nazdar®.

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