Technical Data Sheet

Nazdar 8400 Series Screen Ink

Industrial & Specialty Applications

8400 Series Screen Ink is a polyester solvent-based/conventional screen ink which meets the requirements of various industrial and specialty print applications including, the insert mold decorating (IMD) process. The dried ink film exhibits good gloss and flexibility for forming and post-form trimming. For insert mold decorating (IMD), see the 8400 Technical Data Sheet for IMD applications.

v 20GNI EN

Ref: v 19 EN

Substrates

- Untreated polyester
- Polyester coated surfaces
- Some treated or top coated polyester films
- Polycarbonate
- Polycarbonate blends
- Primed / pre-treated polyester
  (Substrates specific for insert mold decorating)

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 sheet. 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

8400 inks: 200-305 tpi (79-120 tpcm) monofilament polyester mesh for most applications.

Stencil

Use direct emulsions and capillary films which are solvent resistant.

Squeegee

60-80 durometer polyurethane squeegee.

Coverage

8400 inks: 1,200-1,800 square feet (111–167 square meters) per gallon depending upon ink deposit.

Reference www.nazdar.com for examples of coverage calculations.

Printing

8400 Series inks are formulated to be press ready. Thoroughly mix the ink prior to printing. Improper mixing can lead to inconsistent color and ink performance. Add only enough ink to the screen to be able to print for 5-10 minutes. Add additional ink in small increments throughout the print run to maintain screen stability.

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, curing variables/conditions, forming and molding processing.

Nazdar does not recommend inter-mixing of 8400 Series with other inks besides the 8400 Series.

Drying / Curing Parameters

8400 Series dries by solvent evaporation and dries at temperatures of 90°-150°F (32°-66°C) in seconds. Due to the softer ink film which 8400 forms, block resistance testing should be carefully performed prior to production. Good air circulation is necessary to remove the vaporized solvents. Multiple layers of ink may require longer drying times than a single layer.

When catalyst has been added to the ink, the catalyzed ink film will continue to cure after the initial drying. For complete curing, baked for 1 hour at 195°F (90°C) or allow at least 3 days at room temperature before further processing.

Clears / Varnishes

Mixing Clear / Overprint Clear: Use 8427 Mixing / Overprint Clear to reduce the density of colors.

Common Performance Additives

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 ink + 8g additive = 108g total

Solvent-Based Screen Ink

The recommended sequence for adding additives is: thinner and/or retarder first and the catalyst or adhesion promoter last. Mix thoroughly.

Catalyst / Adhesion Promoter: Use NB72 Catalyst or NB80 Adhesion Promoter to enhance adhesion on certain materials. If catalyzing with NB72, add up to 10% NB72 by weight. The addition of NB72 may cause yellowing of the ink film on exposure to sunlight. For applications requiring some outdoor exposure, use NB80 up to 10% by weight.

Shelf life of catalyzed ink is approximately 6 to 8 hours. Improved adhesion will be demonstrated after 24 hours, with full cross linking in 3-7 days.

Thinner: Use RE195 Thinner/Screen Wash to reduce the viscosity of these inks. Add up to 15% by weight. RE195 may also be used to wash ink from the screen.

Fast Thinner: Use RE197 Thinner to reduce the viscosity of the ink. RE197 is a faster evaporating, more aggressive thinner than the RE195. RE197 has shown improved adhesion to some plastics without the need of a catalyst/adhesion promoter.

Retarder: Use RE196 Retarder to slow down drying and increase screen stability. Add up to 15% by weight. RE196 Retarder can be used in combination with RE195 Thinner/Screen Wash up to a total of 15% by weight depending on production environmental conditions.

Flattening: Use 8448 Flatting Paste to reduce gloss and to improve slip. Add up to 10% by weight.

Cleanup

Screen Wash (Prior to Reclaim): Use RE195 Thinner/Screen Wash or 9637 Screen Wash.

Press Wash (On Press): Use IMS301 Premium Graphic Press Wash or similar product.

Storage / Shelf Life

Store closed containers at temperatures between 65°-78°F (18°-25°C). Storing products outside of these recommendations may shorten their shelf life. Ink taken from the press should not be returned to the original container; store separately to avoid contaminating unused ink.

Standard 8400 Series items are useable for a period of at least 48 months from the date of manufacture. To obtain the official shelf life letter, Contact Nazdar Technical Service at InkAnswers@nazdar.com or see contact listing at the end of this document.

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Processing

Printed parts that have been thoroughly dried and cured may be formed, die or laser cut and molded. Some films absorb atmospheric moisture; consult with the film supplier for information whether the printed films need to be dried prior to forming.

General Information

Ink Handling

All personnel mixing and handling these products must wear gloves and eye protection. Clean up spills immediately. If ink does come in contact with skin, wipe ink off with a clean, dry, absorbent cloth (do not use solvent or thinner). Wash the affected area with soap and water. Consult the applicable Safety Data Sheet (SDS / MSDS) for further instructions and warnings.

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

It is imperative to check adhesion on a fully dried/cured print:

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 cut area, rub down, wait for 1 minute and rip off at a 180 degree angle. Ink should only come off in actual cut areas.

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.

Standard Printing Colors

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

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Single Pigment Toners

Single Pigment Toners produce clean and vibrant colors. Single Pigment Toners can be used as supplied, in color matches or let down with mixing clear.

Transparent Colors

Transparent Colors produce very good transparency and depth of color. Transparent Toners can be used as supplied, in color matches or let down with mixing clear.

Halogen-Free Colors

These colors are free of the halogens Chlorine and Bromine based on supplier information and in compliance with the electronics industry standard, IEC 61249-2-21 (http://www.iec.ch/).

Tie Coat

8449 Tie-Coat is designed to be used for In-Mold Decorating (IMD) applications. For more information, see the 8400 Series Screen Ink Technical Data Sheet for IMD Applications.

Non-Conductive Black

NSC60 Non-Conductive Black is formulated to minimize conductivity in situations where static discharge is possible to occur during post print processing. To minimize or prevent electrostatic discharge (ESD) the NSC60 must be used in place of the 8452 Super Opaque Black. Process NSC60 as outlined for the 8400 Series.

Color Card Materials

Conventional Color Card (CARD375): shows the Standard Printing Colors.

Packaging / Availability

Contact your Nazdar distributor for product availability and offering.

Standard Ink Items

Printing Colors

Item Number	Color
8410	Primrose Yellow
8411	Lemon Yellow
8412	Medium Yellow
8413	Emerald Green
8418	Scarlet Red
8419	Fire Red
8420	Brilliant Orange
8421	Peacock Blue
8422	Ultra Blue
8424	Gloss Black
8427	Mixing/Overprint Clear
8450	Barrier White
8452	Super Opaque Black

Single Pigment Toners

Item Number	Color
8480	Yellow Toner
8481	Orange Toner
8482	Carmine Toner
8483	Magenta Toner
8484	Maroon Toner
8485	Green Toner
8486	Blue Toner (GS)
8487	Blue Toner (RS)
8488	Violet Toner
8489	Red Toner

Transparent Colors

Item Number	Color
84PB12	Transparent Medium Yellow
84PB18	Transparent Red
84PB60	Stop Sign Red

Tie-Coat

Item Number	Color
8449	Tie-Coat

Halogen-Free Colors

Item Number	Color
84201	Halogen-Free Tinting Black
84202	Halogen-Free Tinting White

Non-Conductive Black

Item Number	Color
NSC60	Non-Conductive Black

Additives / Reducers

Item Number	Color
8448	Flatting Paste
NB72	Catalyst
NB80	Adhesion Promoter
RE195	Thinner/Screen Wash
RE196	Retarder
RE197	Thinner

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Cleaners / Clean Up

Item Number	Color
RE195	Thinner/Screen Wash
9637	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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