Nazdar 5100 Series Screen Ink

5100 Series Screen Ink is a solvent-based ink system for container printing which exhibits adhesion to various plastics, glass and some metals. 5100 Series has excellent resistance to a wide range of solvents and chemicals used in cosmetics, personal care and household cleaning. As a high gloss, fast drying, single part system, 5100 Series shows good adhesion immediately upon drying, while final properties will be achieved in 5-7 days.

Substrates

Treated polypropylene (PP)
Treated polyethylene (PE)
Glass
Metal

Notes & Cautions

Due to variations in the type and manufacture of plastics, glass and metals, pre-testing must be done prior to any production run. Adhesion to the substrate does not guarantee satisfactory results with other end-use specifications

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.

Mesh

230 - 355 tpi (90 - 140 tpcm) monofilament polyester mesh for most applications.

Stencil

Use direct emulsions and capillary films which are solvent resistant.

Squeegee

70-80 durometer polyurethane squeegee.

Coverage

Depending upon ink deposit, the estimated coverage per gallon: 1,200 – 3,000 square feet (110 - 275 square meters)
Reference www.nazdar.com/en-us/ColorStar for examples of coverage calculations.

Screen Printing

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. 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.

Nazdar does not recommend inter-mixing this ink series with other inks or series.

Drying / Curing Parameters

5100 Series should air dry to touch in 8-15 minutes depending on the ambient conditions and screen mesh used. For best results, force drying at temperatures of 90°F - 180°F (32°C - 83°C) is recommended. Good air flow at proper temperature is the key to accelerating dry cycles and is necessary to remove the vaporized solvents. Multiple layers of ink may require longer drying times than a single layer.

Adhesion Testing

- Scratch surface – the ink surface should resist scratching.
- 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.

Cleanup
For screen cleaning, similar products to those listed below may be used.

Screen Wash (Prior to Reclaim): Use IMS201 Premium Graphic Screen Wash or IMS203 Economy Graphic Screen Wash
Press Wash (On Press): Use IMS301 Premium Graphic Press Wash

Ink Modifications

Clears / Varnishes
Mixing Clear/Metallic Clear: use to reduce the density of colors or as a clear base for specialty additives such as Metallic additives. or bronze metallic additives are not recommended to be mixed with the 5126 Mixing Clear or other 5100 inks.

Additives
The market specific performance properties of this ink series / ink item 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.

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Example for additives: Ink at 100g with 8% of an additive is calculated as: 100g ink + 8g additive = 108g total

Reducer / Thinner
Use the following item(s) to reduce the viscosity of these inks. Over reduction can reduce print definition, film thickness and adversely affect cure.
Use RE185 Thinner to reduce the viscosity of these inks. Add up to 5%.
Use RE212 Thinner to reduce viscosity, optimize on-screen stability and printability, enhance cure and chemical resistance. Add up to 15%.

Retarder
Use CARE53 Gel Retarder to improve on-screen stability without reducing viscosity. Add up to 5%. The addition of retarder will extend the drying time.

Thickener / Increase Viscosity
Use SIPI414 Thickening Powder to increase viscosity. Add powder starting at ½%. The addition of SIPI414 may affect printability and lower the gloss of the ink film. The addition of SIPI414 requires power mixing of the ink.

Catalyst
Use V5070 Catalyst to increase cure speed and chemical resistance. Add up to 10%. Ink mixed with V5070 Catalyst has a 1-2 day pot life in a tightly sealed container.

Flow Control / Leveling Agent
Use CARE22 Flow Agent to help reduce pinholes or orange peel appearance. Add up to ½%.

General Information
Handling
Refer to the SDS for recommendations on handling.
Wear gloves and barrier cream to prevent direct skin contact. Safety glasses are suggested in areas where ink may be splashed. If product 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.
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).

Outdoor Durability Variables
Outdoor durability cannot be specified exactly. Slight color change and loss of gloss should be expected. Variables affecting a printed part's durability include:
- Ink film thickness and degree of curing
- Color formulation: large amounts of mixing clear or white, mixing several colors into one match, and/or mixing a small quantity of any single color
- Substrate type and age
- Mounting angle and directional orientation
- Geographical location
- Degree of air pollution
- Excessive abrasion
- Non-clear coated prints exhibit more color change and loss of gloss.

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.
Useable for a period of at least **24 months** from the date of manufacture.

Shelf life above applies to the standard ink items listed on this TDS. To obtain the shelf life for special inks and additives, contact Nazdar Customer Service or Nazdar Technical Service. See contact listing at the end of this document.

Standard Color Range
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.

Pantone Base Colors
Pantone Matching System Base Colors are used to simulate the Pantone® Formulation Guide when printed on a white substrate. 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.

360 Series Colors: These colors are formulated to have no white or opaque pigments. This allows the colors to be more vibrant and allows for a better match of intense and darker colors.

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.

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 the ink. Contact Nazdar for the item number(s) and availability of special effect products or they can be found at www.nazdar.com.

Metallic Silver (aluminum), add up to: 8%
Metallic Gold (bronze): Gold or bronze metallic powders are not recommended to be mixed with the 5126 Mixing Clear or other 5100 inks. The addition of gold or bronze powders inhibits cure and affects chemical resistance. As an alternative, use the 51185 Gold and 51186 Copper.
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%
Multi-Chromatic, add up to: 10%

Phosphorescent, add up to: 50%

Fluorescents, add up to: 30%
Fluorescent colors fade quickly with exposure to ultraviolet light.

Color Card Materials

The following is a list of available literature representing this ink series.
- Conventional Color Card (CARD375): shows the Standard 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.

Item Type	Item Number	Item (or Color) Description
Standard Colors	5110	Primrose Yellow
Standard Colors	5112	Medium Yellow
Standard Colors	5119	Fire Red
Standard Colors	5120	Brilliant Orange
Clears / Varnishes	5126	Mixing Clear
Standard Colors	5152	Super Opaque Black
Standard Colors	5175	Super Opaque White
Mixing Colors	51358	Tinting White
Mixing Colors	51359	Tinting Black
Mixing Colors	51360	Orange
Mixing Colors	51361	Yellow
Mixing Colors	51362	Warm Red
Mixing Colors	51363	Rubine Red
Mixing Colors	51364	Rhodamine Red
Mixing Colors	51365	Purple
Mixing Colors	51366	Violet
Mixing Colors	51367	Reflex Blue
Mixing Colors	51368	Process Blue
Mixing Colors	51369	Green
Blending Toners / Toners	5182	Carmine Toner
Blending Toners / Toners	5183	Magenta Toner
Blending Toners / Toners	5184	Maroon Toner
Blending Toners / Toners	5185	Green Toner
Blending Toners / Toners	5186	Blue Toner (GS)
Blending Toners / Toners	5187	Blue Toner (RS)
Blending Toners / Toners	5188	Violet Toner
Metallic Colors	51185	Gold
Metallic Colors	51186	Copper
Metallic Colors	51187	Silver
Additives	CARE22	Flow Agent
Additives	CARE53	Gel Retarder
Additives	RE185	Thinner
Additives	RE212	Thinner
Additives	SIPI414	Thickening Powder
Additives	V5070	Catalyst
Cleaners	IMS201	Premium Graphic Screen Wash
Cleaners	IMS203	Economy Graphic Screen Wash
Cleaners	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®.

Nazdar Ink Technologies Offices

Nazdar Ink Technologies - World Headquarters
8501 Hedge Lane Terrace
Shawnee, KS 66227-3290 USA
Toll Free US: 866-340-3579
Tel: +1 913-422-2255
Fax: +1 913-422-2296
Customer Service E-mail: NazdarOrders@nazdar.com
Technical Support E-mail: TechSupport@Nazdar.com

Nazdar Limited – EMEA
Battersea Road, Heaton Mersey
Stockport, England SK4 3EA
Tel: + 44 (0)-161-442-2111
Fax: + 44 (0)-161-442-2001
EMEA Customer Service E-mail: infoUK@nazdar.com
EMEA Technical Service E-mail: technicalservicesUK@nazdar.com

Nazdar – Asia Pacific
11 Changi North Street 1
#03-03/04
Singapore 498823
Tel: +65 6385 4611
E-mail: aspac@nazdar.com