

Container

Versacon® Classic 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.

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Substrates

- Treated polyethylene
- Treated polypropylene
- Glass
- Metals

Note: 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.

User Information**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

Estimated 1,200 – 3,000 square feet (110 - 275 square meters) per gallon depending upon ink deposit. Reference www.nazdar.com for examples of coverage calculations.

Printing

The 5100 Series ink may be thinned with RE212 Thinner or RE185 Thinner prior to use (see the Additives section). 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.

Plastic substrates must have a minimum surface energy level of 48 dynes/cm for optimum ink flow and adhesion.

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 drying variables/conditions.

Nazdar does not recommend inter-mixing of 5100 series with other inks besides the 5100 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.

Clears / Varnishes

Mixing Clear / Metallic Mixing Clear: Use 5126 Mixing Clear to reduce the density of colors or as a clear base for specialty additives such as silver / aluminum metallic additives. Gold or bronze metallic additives are not recommended to be mixed with the 5126 Mixing Clear or other 5100 inks. See the Special Effects section.

Common Performance Additives

The market specific performance properties of the 5100 Series should be acceptable for most applications without the need for additives. When required, any additives should be thoroughly

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mixed before each use. The addition of additives, regardless of amount, may shorten the pot life of the mixture. The pot life of the mixture depends not only on the type and amount of additive but also on the processing environment.

In some cases, additives may hinder overall performance. Inter-coat adhesion between colors that include additives must be thoroughly qualified prior to full scale production. Inks containing additives should not be mixed with other inks.

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

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

Thinner / Reducer: Use RE185 Reducer to reduce the viscosity of these inks. Add up to 15% by weight.

Use RE212 Thinner to reduce viscosity, optimize on-screen stability and printability, enhance cure and chemical resistance. Add up to 15% by weight.

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

Flow Agent: Use CARE22 Flow Agent to help reduce pinholes or orange peel appearance. Add up to ½% by weight.

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

Thickener: Use SIPI414 Thickening Powder to increase viscosity. Add powder starting at ½% by weight. 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.

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 / 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 5100 Series items are 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.

Contact Nazdar Technical Service at InkAnswers@nazdar.com, for any questions.

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

1. Scratch surface – the ink surface should resist scratching.
2. 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.

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

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content is required, independent lab analysis is recommended.

Standard Printing Colors

Standard Printing Colors have excellent opacity. These colors are intended to work 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.

360 Series Colors: 51360-51369 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.

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.

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

The following special effect pigments may be added to 5100 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.

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.

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.

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

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

Phosphorescent: Add up to 20% by weight.

Fluorescents: Add up to 25% by weight. Fluorescent colors fade quickly with exposure to ultraviolet light.

Color Card Materials

The following is a list of available screen printed samples of the 5100 Series.

Conventional Color Card (CARD375): shows the Standard Printing Colors and Pantone Matching System Base Colors.

Special Effects Color Card (CARDSPL): shows Metallic, Pearlescent, Interference, Multi-Chromatic, Phosphorescent, and Fluorescent effects mixed with clear.

Packaging / Availability

Contact your Nazdar distributor for product availability and offering.

Standard Ink Items

Check with your distributor for available container size.

Printing Colors

Item Number	Color
5110	Primrose Yellow
5112	Medium Yellow
5119	Fire Red
5120	Brilliant Orange
5126	Mixing Clear
5152	Super Opaque Black
5175	Super Opaque White

Pantone Matching System® Base Colors

Item Number	Color
51358	Tinting White
51359	Tinting Black
51360	Orange

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51361	Yellow
51362	Warm Red
51363	Rubine Red
51364	Rhodamine Red
51365	Purple
51366	Violet
51367	Reflex Blue
51368	Process Blue
51369	Green

Single Pigment Toners

Item Number	Color
5182	Carmine Toner
5183	Magenta Toner
5184	Maroon Toner
5185	Green Toner
5186	Blue Toner (GS)
5187	Blue Toner (RS)
5188	Violet Toner

Metallic Effect Colors

Item Number	Color
51185	Gold
51187	Silver

Additives / Reducers

Item Number	Color
RE212	Thinner
RE185	Thinner
CARE22	Flow Agent
CARE53	Gel Retarder
SIPI414	Thickening Powder
V5070	Catalyst

Cleaners / Clean Up

Item Number	Color
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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