

59000 Series Enamel Plus Screen Ink is a glossy solvent-based enamel ink formulated to screen print on a wide range of hard-to-adhere-to surfaces such as glass, metal, wood and some plastics for outdoor signs and displays.

Substrates

- Glass
- Metal
- Wood
- Some hard plastics

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

200 - 280 tpi (78 - 110 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 1000 - 1400 square feet (93 – 130 square meters) per gallon depending upon ink deposit. Reference www.nazdar.com for examples of coverage calculations.

Printing

59000 Series should be thinned up to 15% to assure proper ink flow (see additives section). When using 59000 Series 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 drying 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 59000 Series with other inks besides the 59000 Series.

Drying Parameters

59000 Series dries by oxidation, requiring 24-48 hours for total cure/dry. Tack free dry time is about 4-6 hours. To obtain a faster tack free surface, heat set at 180°F (83°C) for 30 minutes. Multiple layers of ink may require longer drying times than a single layer.

Clears / Varnishes

Mixing Clear / Overprint Clear: Use 59140 Overprint Clear to provide added protection to the printed surface.

Gloss Roller Coating: Use 59135 Gloss Coating Varnish as a roller coat overprint clear or as a clear base for specialty additives such as metallics.

Flat Roller Coating: Use 59172 Flat Coating Varnish as a roller coat overprint clear.

Common Performance Additives

59000 Series requires thinning to assure proper flow characteristics. All 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 back into fresh ink.

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: Use 59000 Thinning Varnish or 5560 Fast Thinner to reduce the viscosity of the 59000 Series. Add up to 15% by weight. The 59000 Thinning Varnish may also be used to reduce ink viscosity for roller coating applications.

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Retarders: Use a 50/50 blend of 5560 Fast Thinner and 9050 Retarder to improve screen stability or to slow dry times. Add up to 15% by weight. Reduction with retarders slows drying and can result in blocking.

Gloss / Flattening Powders / Improved Slip: Use 59118 Flattening Paste to reduce gloss and improve slip. Add up to 20%.

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°-90°F (18°-32°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 59000 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.

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

Once ink has dried and cured for 48 hours:

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.

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.

Transparent Colors

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

"LF" Item Numbers

Colors with an item number containing "LF" are lead-free alternatives that replaced a lead containing color. All Nazdar manufactured inks are lead-free.

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 59000 Series. Contact Nazdar for the item number(s) and availability of special effect products. Technical Data Sheets for each of the

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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.

Phosphorescent: Add up to 40% by weight.

Fluorescents: Add up to 40% 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 59000 Series.

Non-Standard Color Card (CARDNS) shows the Printing Colors of the 59000 Series.

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

Items listed below are inventoried in gallon containers.

Printing Colors

Item Number	Color
59LF102	Fire Red
59111	Black
59112	White
59122	Super Opaque White
59LF124	Brilliant Orange
59LF130	Primrose Yellow
59LF132	Lemon Yellow
59LF134	Medium Yellow
59135	Gloss Coating Clear
59140	Overprint Clear
59LF142	Emerald Green
59LF148	Medium Green

59152	Peacock Blue
59156	Ultra Blue
59158	Dark Blue
59204	Bright Red
59191	Flat Black
59192	Flat White
59410	Yellow
59411	Warm Red
59417	Rubine Red
59418	Rhodamine
59422	Reflex Blue
59433	Purple
59440	Process Blue
59441	Green
59660	Stop Sign Red

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
59106	Scarlet Red
59114	Medium Brown
59172	Flat Coating Varnish

Transparent Colors

Item Number	Description
59610	Trans Primrose Yellow
59612	Trans Medium Yellow
59613	Trans Green
59618	Trans Red
59620	Trans Orange
59622	Trans Blue
59628	Trans Gold
59633	Trans Purple

Additives / Thinners

Item Number	Description
5560	Fast Thinner
9050	Retarder
59000	Thinning Varnish
59118	Flattening Paste

v 10 EN

Ref: v 9 EN

Solvent-Based Screen Ink

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Cleaners / Clean Up

v 10 EN

Ref: v 9 EN

Item Number	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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