

N3100 Series is a UV curable screen ink designed for high speed printing of treated polyethylene bottles. Properly cured, these inks will exhibit excellent adhesion, as well as superior resistance to solvents, chemicals and other products typically packaged in polyethylene and polypropylene containers.

SUBSTRATES Treated polyethylene and polypropylene containers

USER INFORMATION

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. See full disclaimer at the end of the document.

MESH 355-420 threads per inch (140-165 threads per cm) monofilament polyester mesh for most applications

STENCIL Solvent resistant, UV ink compatible direct emulsions and capillary films

SQUEEGEE 70-90 durometer polyurethane squeegee

COVERAGE 2500 - 3800 square feet (232 – 353 square meters) per gallon depending upon ink deposit

PRINTING The N3100 Series ink is formulated to be press ready. Thoroughly mix the ink prior to printing.
 Maintain ink temperature at 65°-90°F (18°-32°C) for optimum print and cure performance. Lower temperatures increase the ink viscosity, impairing both flow and cure. Elevated temperatures lower the ink viscosity, reducing print definition, film thickness and opacity.
 Pretest to determine optimum printing performance for a particular set of ink, substrate, screen, press, and curing variables/conditions.
 The ink can be affected by stray UV light in and around a printing facility. Be aware of skylights, windows and overhead lights curing the ink in the screen. Light filters are recommended. Be aware of stray light coming out of curing stations which may affect ink stability on press.

CURE PARAMETERS The N3100 Series is formulated to cure at production speeds of 60-80 bottles per minute with properly maintained automatic equipment.
 Millijoules – radiometer readings in millijoules represent the total amount of UV energy arriving on the surface. In container printing, the total amount of energy the ink and the container is exposed to depends on the number of bottle rotations under the curing unit. A minimum of 300 millijoules may be necessary to cure certain colors.
 Milliwatts – radiometer readings in milliwatts represent the penetrating power of the UV energy arriving on the surface. A minimum of 600 milliwatts may be necessary for through cure.
 These guidelines are intended only as starting point for determining cure parameters, which must be determined under actual production conditions.

CLEAR / VARNISHES Mixing Clear / Metallic Mixing Clear: Use N3126 Mixing Clear to reduce the density of colors or as a clear base for specialty additives such as metallic powders.

ADDITIVES

All additives should be thoroughly mixed into the ink before each use. Prior to production, test any additive adjustment to the ink.

Reducer: Use RE301 UV Reducer to reduce the viscosity of these inks. Add up to 10% by weight.

Adhesion Promoters:

NB80 UV Adhesion Promoter - to gain additional performance and enhance water resistance, use NB80 UV Adhesion Promoter. Add up to 5% by weight. Improved properties will be demonstrated after 24 hours, with full cross linking in 4-7 days. Ink mixed with NB80 has a 4-6 hour pot life.

60001592CR Spl N31 Adhesion Promoter – may be added up to 5% by weight for better adhesion and chemical resistance. Mix thoroughly. Ink mixture will have a limited pot life of 4-6 hours.

CARE68 Adhesion Promoter may be added for better adhesion and increase chemical resistance. Add up to 1% by weight. Mix thoroughly and use the ink mixture immediately.

CLEAN UP

Screen Wash (Prior to Reclaim): Use IMS203 Economy Graphic Screen Wash or IMS207C Graphic Recirculating Wash

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

STORAGE

Inks react to light and temperature. Store tightly covered at temperatures between 65°-90°F (18°-32°C). Ink taken from the press should not be returned to the original container; store separately to avoid contaminating unused ink.

GENERAL INFORMATION

INK HANDLING

Direct skin contact to UV inks is the primary route of exposure and irritation. Therefore, it is recommended that all personnel handling these products 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 N3100 Material Safety Data Sheet for further instructions and warnings.

The N3100 is a one-part, 100% solids UV-curable screen printing ink and does not contain N-vinyl-2-pyrrolidone (trade name V-Pyrol®).

ADHESION TESTING

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

1. Touch of ink surface – the ink surface will be smooth and slick.
2. Thumb twist – the ink surface will not mar or smudge.
3. Scratch surface – the ink surface will resist scratching.
4. 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.

Full adhesion characteristics are demonstrated within 24 hours after cure.

PRODUCT OFFERING

STANDARD PRINTING COLORS

The Standard Printing Colors have excellent opacity, flow characteristics, and are intended to work well from the container.

N3177 HB (heavy body) Super Opaque Black and N3176 HB High Intensity White are formulated at a higher viscosity to minimize dripping through the screen in the course of production. N3177 may be mixed with N3152 Super Opaque Black to achieve a desired viscosity. Similarly, N3176 may be mixed with N3175 Super Opaque White and N3178 High Intensity White.

PANTONE MATCHING SYSTEM® BASE COLORS

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

60 Series Colors: N3161-N3169 colors have a high pigment concentration. These colors are formulated to have some white pigment or opaque pigment in order to increase opacity.

SINGLE PIGMENT TONERS

The Single Pigment Toners produce clean and vibrant colors and are press ready. The Single Pigment Toners can be used in color matches, or let down with mixing clear.

SPECIAL ADDITIVES

When inks are to be printed over a special effect color, the overprinting ink(s) must be evaluated for inter-coat adhesion before proceeding with the production run. To maximize inter-coat adhesion, specialty colors should be printed as late as possible in the print sequence.

The following special effect pigments may be added to N3100 Series. These pigments are available in 1-pound containers. Contact Nazdar for the item number(s) and availability of special effect products. Specialty pigments may settle in the container; prior to printing, thoroughly mix the ink.

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

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

Mix only enough metallic ink to be used the same day. Chemical reactions in metallic inks may result in viscosity, color and printability changes over time.

Pearlescents / Interference Pigments: add up to 20% by weight.

Multi-Chromatic Pigments: add up to 10% by weight.

See the Pearlescent, Interference, and Multi-Chromatic Technical Data Sheets for more information.

Pantone® 871c to 877c have been matched in N3100 Series Ink using the Pearlescent Pigments.

Phosphorescents: Add up to 20% by weight.

Fluorescents: Add up to 25% by weight. Fluorescent colors fade quickly with exposure to ultraviolet light. This includes outdoor exposure as well as UV reactor exposure.



N3100 SERIES UV POLYETHYLENE CONTAINER SCREEN INK

TECHNICAL DATA SHEET

COLOR CARD MATERIALS

The following is a list of screen printed samples available.

UV Color Card: shows the Standard Printing Colors and Pantone Matching System® Base Colors.

Special Effects Color Card: shows Metallic, Pearlescent, Interference, and Multi-Chromatic effects mixed with clear.

Non-Metallic Pantone® Simulations sheet: shows representations of the 871c to 877c Pantone® Metallic color matches using pearlescent pigments.

PACKAGING

All items listed below are available in gallon containers.

Items marked with * are available in 1kilo containers also.

Stock Number	Standard Printing Colors	Stock Number	Pantone Matching System® Base Colors
N3110	Primrose Yellow	N3158	Tinting White
N3111	Lemon Yellow	N3159	Tinting Black
N3112	Medium Yellow	N3161	Yellow
N3119	Fire Red	N3162	Warm Red
N3120	Brilliant Orange	N3163	Rubine Red
N3126*	Mixing Clear	N3164	Rhodamine Red
N3152*	Super Opaque Black	N3165	Purple
N3175	Super Opaque White	N3166	Violet
N3176*	HB High Intensity White	N3167	Reflex Blue
N3177	HB Super Opaque Black	N3168	Process Blue
N3178*	High Intensity White	N3169	Green
Stock Number	Single Pigment Toners	Stock Number	Single Pigment Toners
N3180	Yellow Toner	N3185	Green Toner
N3182	Carmine Toner	N3186	Blue Toner (GS)
N3183	Magenta Toner	N3187	Blue Toner (RS)
N3184	Maroon Toner	N3188	Violet Toner



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PACKAGING

Additives/Reducers are available in 1 liter and/or gallon containers.
Cleaners are available in 1-gallon, 5-gallon and 55-gallon containers.

Stock Number	Additives/Reducers	Stock Number	Cleaners
RE301	UV Reducer	IMS203	Economy Graphic Screen Wash
NB80	UV Adhesion Promoter (quarts only)	IMS207C	Graphic Recirculating Wash
CARE68	Adhesion Promoter	IMS301	Premium Graphic Press Wash
60001592CR	Spl N31 Adhesion Promoter		

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®.

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

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