

The Economy 3600 Vinyl Banner Process Colors are UV screen inks specifically formulated for 4-color process printing of indoor and short term outdoor POP vinyl banner applications.

v 4EN

Ref: v 3 EN

Substrates

- Vinyl banner

Substrate recommendation is 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

355-420 tpi (140-165 tpcm) monofilament polyester with a mesh opening of 22-40 um for most applications.

Stencil

Use direct emulsions and capillary films which are solvent resistant and UV compatible.

Squeegee

70-90 durometer polyurethane squeegee.

Coverage

Estimated 3000-3600 square feet (280 – 335 square meters) per gallon depending upon ink deposit. Reference www.nazdar.com for examples of coverage calculations.

Printing

Economy 3600 Series is formulated to be press ready. 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.

The ink can be affected by stray UV light. Be aware of skylights, windows and overhead lights curing the ink in the screen; light filters are recommended. Leaving a container uncovered may result in the ink's surface forming a "skin", caused by reaction with ambient lighting. Keep containers covered.

Nazdar does not recommend inter-mixing of Economy 3600 Series with other inks besides the Economy 3600 Series.

Cure Parameters

The Economy 3600 Series ink cures when exposed to a medium pressure mercury vapor lamp with millijoules (mJ) and milliwatts (mW) of:

- 80-100 mJ/cm² @ 600 mW/cm² for

These guidelines are intended only as a starting point for determining cure parameters, which must be determined under actual production conditions. "Undercuring" the ink may result in poor adhesion, lower block resistance, reduced durability, and higher residual odor. "Overcuring" the ink may reduce the flexibility of the printed part and adhesion of subsequent ink layers.

To increase mJ levels, slow down the belt speed or scan speed. To increase mW levels, increase the wattage setting of the UV reactor. To optimize mJ and mW output, maintain the bulb and reflector, and ensure proper focus to the substrate.

These guidelines are representative of measurements taken using an EIT® UVICURE® Plus radiometer measuring the UVA bandwidth (320-390 nm). To obtain accurate mW readings with the UVICURE® Plus, reduce the belt speed to less than 40 ft/min.

Clears / Varnishes

Mixing Clear: Use 36EC140 Econo HT Extender Base to reduce the density of colors.

Additional Colors

Economy 3600 Vinyl Banner UV Process Colors do not contain Standard Printing Colors or Pantone Matching System® Base Colors. When these colors

UV Screen Ink

are required, use 3600 Series or 1900 Series colors (see the 3600 Series or 1900 Series Technical Data Sheet). The Economy 3600 Vinyl Banner UV Process Colors are inter-printable with 3600 Series and 1900 Series inks.

Common Performance Additives

The market specific performance properties of the Economy 3600 Series 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.

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

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

Reducer: Use RE306 UV Reducer to reduce the viscosity of these inks. Add up to 10% by weight. Over reduction can reduce print definition, film thickness and adversely affect cure.

Gloss / Flattening Powders / Improved Slip: Use CARE118 Satin Paste to reduce gloss and improve slip. Add up to 10% by weight. CARE118 should be power mixed into Economy 3600 Series ink.

Cleanup

Screen Wash (Prior to Reclaim): Use IMS207 Graphic Recirculating Screen Wash, IMS203 Economy Graphic Screen Wash, or IMS206 Graphic Auto Screen Wash.

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

Storage

Store closed containers at temperatures between 65°-78°F (18°-25°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.

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 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

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

1. Touch of ink surface – the ink surface should be smooth and slick.
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.

Full adhesion characteristics at proper cure levels are demonstrated within 24 hours.

Weathering / Outdoor Durability

At full strength and properly cured, the Economy 3600 Series colors are formulated to provide 6 month outdoor durability when mounted vertically in the Central U.S.A.

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
- Substrate type and age
- Mounting angle and directional orientation
- Geographical location
- Degree of air pollution
- Excessive abrasion

v 4EN

Ref: v 3 EN

UV Screen Ink

Manufacturer's Product Offering

Based on information from our raw material suppliers, Economy 3600 Series products are formulated to contain less than 0.06% lead. If exact heavy metal content is required, independent lab analysis is recommended.

Halftone Colors

Halftone Extender Base is used to reduce the density of any of the halftone colors.

Standard Halftone Colors are formulated with hues and densities common to the graphic industry.

Dense Halftone Colors are formulated with increased densities over the Standard Halftone colors and are designed for printers who want to have the latitude to adjust the density levels.

Packaging / Availability

Contact your Nazdar distributor for product availability and offering.

Standard Halftones

| Item Number | Color |
|-------------|------------------------|
| 36EC140 | Econo HT Extender Base |
| 36EC141 | Econo Halftone Cyan |
| 36EC142 | Econo Halftone Magenta |
| 36EC143 | Econo Halftone Yellow |
| 36EC144 | Econo Halftone Black |

Dense Halftones

| Item Number | Color |
|-------------|-------------------------------|
| 36EC151 | Econo Halftone Cyan Dense |
| 36EC152 | Econo Halftone Magenta Dense |
| 36EC153 | Econo Halftone Yellow Dense |
| 36EC154 | Econo Halftone Black Dense |
| 36EC156 | Econo High Intensity HT Black |

Additives / Reducers

| Item Number | Item Description |
|-------------|------------------|
| RE306 | UV Reducer |
| CARE118 | UV Satin Paste |

Cleaners / Clean Up

| Item Number | Item 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®.

v 4EN

Ref: v 3 EN

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: +1 913-422-1888
Fax: +1 913-422-2296
E-mail: custserv@nazdar.com
Technical Support E-mail: InkAnswers@Nazdar.com

Nazdar Limited – EMEA

Battersea Road, Heaton Mersey
Stockport, England SK4 3EE
Tel: + 44 (0)-161-442-2111
Fax: + 44 (0)-161-442-2001
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

UV Screen Ink