

PowerPrint® Renew 1400 is Nazdar’s first UV screen ink developed to contain raw materials made from renewable resources rather than from fossil fuels. Measured by an independent lab using ASTM D6866 method, Renew 1400 contains 20% biobase or renewable resource materials. Renew 1400 provides the ink solution as part of a ‘Green’ Point-of-Purchase print product offering and a company’s Corporate Sustainability Practices.

PowerPrint® Renew 1400 is targeted to be used for indoor and short-term outdoor graphic printing.

**SUBSTRATES** Styrene, coated paper, rigid vinyl, some vinyl banner

### 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 tpi (140-165 tpcm) monofilament polyester mesh for most applications

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

**SQUEEGEE** 70-90 durometer polyurethane squeegee

**COVERAGE** 3,200-4,200 square feet (295-390 square meters) per gallon depending upon ink deposit

**PRINTING** PowerPrint® Renew 1400 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.

**CURE PARAMETERS** PowerPrint® Renew 1400 Series ink cures when exposed to a medium pressure mercury vapor lamp set at 200 watts per inch with millijoules (mJ) and milliwatts (mW) of:

100-130 mJ/cm<sup>2</sup> @ 600+ mW/cm<sup>2</sup> (highly pigmented colors require higher UV output)

These guidelines are intended only as a starting point for determining cure parameters, which must be determined under actual production conditions.

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 condition and focus to the substrate.

The values mentioned above 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.

*Note:* Porous substrates can allow ink to dive below the surface, requiring a more thorough cure to overcome the added ink deposit thickness.

**CLEAR** Mixing Clear: Use 1426 Mixing Clear to reduce the intensity of colors or as a clear base for specialty additives such as Metallics, Fluorescents, and Pearlescents.

### ADDITIVES

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

*Adhesion Promoter:* Use NB80 UV Adhesion Promoter to enhance adhesion on treated polypropylene and polyethylene. Add up to 5% by weight. Improved adhesion will not be demonstrated for 24 hours, with full cross linking in 4-7 days. Ink mixed with NB80 UV Adhesion Promoter has a 4-8 hour pot life.

### 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

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

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 PowerPrint® Renew 1400 Series Material Safety Data Sheet for further instructions and warnings.

PowerPrint® Renew 1400 Series is a one-part, 100% solids UV-curable screen printing ink which 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. Thumb twist – the ink surface will not mar or smudge.
2. Scratch surface – the ink surface will resist scratching. Coated paper substrates scratch easily, so use magnification to determine if scratches are ink only or ink and substrate.
3. 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.

### WEATHERING / OUTDOOR DURABILITY

At full strength and properly cured, PowerPrint® Renew 1400 Series colors are formulated to provide 6 months 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:
  - Adding large amounts of mixing clear or white to any color
  - Mixing several colors to achieve a specific color
  - Mixing a small quantity of any single color with any other color
- Substrate type and age
- Mounting angle or directional orientation
- Geographical location
- Air pollution and exposure to excessive abrasion (for example, brush car washes)

### PRODUCT OFFERING

#### PANTONE MATCHING SYSTEM® BASE COLORS

360 Series Colors: 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 1426 Mixing Clear.

#### 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 matched to the requirements of the graphics industry.

Dense Halftone Colors are formulated with increased densities over the Standard Halftone densities and are designed for printers that want to have the latitude to adjust the density levels of their halftone inks.

High Intensity Halftone Black has been developed to function as a dense halftone and line color in a single pass.

Yellow (RS) Halftone Colors are intended to better facilitate matching redder shades without blending Halftone Magenta into the Halftone Yellow.

#### STANDARD PRINTING COLORS

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

#### PACKAGING

All items listed below are available in gallon containers.

Stock Number	Pantone Matching System® Base Colors	Stock Number	Standard/Dense Halftone Colors MTR (Medium Tack Rheology)
1426	Mixing Clear	14140	Halftone Extender Base (MTR)
14358	Tinting White	14141	Halftone Cyan (MTR)
14359	Tinting Black	14EC142	Economy Halftone Magenta (MTR)
14360	Orange	14EC143	Economy Halftone Yellow (MTR)
14361	Yellow	14144	Halftone Black (MTR)
14362	Warm Red	14151	Halftone Cyan Dense (MTR)
14363	Rubine Red	14EC152	Economy Halftone Magenta Dense (MTR)
14364	Rhodamine Red	14EC153	Economy Halftone Yellow Dense (MTR)
14365	Purple	14154	Halftone Black Dense (MTR)
14366	Violet	14156	High Intensity Halftone Black (MTR)
14367	Reflex Blue		
14368	Process Blue		
14369	Green		
Stock Number	Standard Printing Colors		
1419	Fire Red		
1478	High Intensity White		
1479	High Intensity Black		

### PACKAGING / AVAILABILITY

Special order colors: all items listed below are non-inventoried items and may require additional lead time. These items are available in gallon containers.

Stock Number	Standard Printing Colors	Stock Number	Standard/Dense Halftone Colors MTR (Medium Tack Rheology)
1410	Primrose Yellow	14155	Halftone Yellow Dense RS (MTR)
1411	Lemon Yellow		
1412	Medium Yellow		
1413	Emerald Green		
1420	Brilliant Orange		
1452	Super Opaque Black		
1467	Reflex Blue		
1468	Process Blue		
1475	Super Opaque White		

### PACKAGING

Additives/Reducers are available in quarts.  
Cleaners are available in quart and gallon containers.

Stock Number	Additives/Reducers	Stock Number	Cleaners
NB80	UV Adhesion Promoter	IMS203	Economy Graphic Screen Wash
		IMS207C	Graphic Recirculating Wash
		IMS301	Premium Graphic Press Wash

*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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