

8400 Series CVIM Screen Ink has been formulated to meet requirements of the insert mold decorating (IMD) process. 8400 has flexibility for forming and post-form trimming, resistance to wash out during the molding process and adhesion to polycarbonate injection mold resin. Overprinting the 8400 with the 8449 Tie-Coat promotes adhesion to other injection resins such as ABS, PMMA and PVC.

8400 Series ink is for second surface printing on polycarbonate, polycarbonate blend, or pre-treated polyester films which will be formed then molded in the insert mold decorating process.

The addition of NB72 Catalyst or NB80 Adhesion Promoter is necessary for in-mold decorating applications.

**SUBSTRATES** Polycarbonate, polycarbonate blends and primed/pre-treated polyester used for insert mold decoration.

## 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** 8400 inks: 200 - 305 threads per inch (77 – 120 threads per cm) monofilament polyester.  
8449 Tie-Coat: 110-200 threads per inch (43-79 threads per cm) monofilament polyester.

**STENCIL** Solvent resistant direct emulsions and capillary films.

**SQUEEGEE** 60-80 durometer polyurethane squeegee.

**COVERAGE** 8400 inks: 1200-1800 square feet (111 – 167 square meters) per gallon depending upon ink deposit.  
8449 Tie-Coat: 600-1200 square feet (55-111 square meters) per gallon depending upon ink deposit.

**CATALYST** *Polycarbonate Injection Resin:* 2-4% by weight NB72 Catalyst must be added to all 8400 inks. This will produce a usable pot life of the ink mixture of 6-8 hours.  
*ABS, PVC or PMMA Injection Resin:* 2% by weight NB80 Adhesion Promoter must be added to all 8400 inks. This will produce a usable pot life of 6-8 hours for the ink mixture.  
The addition of NB72 or NB80 is not necessary for the 8449 Tie-Coat.

**PRINTING** Thoroughly mix the inks prior to printing. 8400 Series inks and 8449 Tie-Coat are formulated to be press ready. When utilizing ABS, PVC or PMMA injection resin, print the 8400 colors first, properly drying after each layer, then overprint with the 8449 Tie-Coat. To maintain on screen stability, add additional ink in small increments throughout the print run. Maintain ink temperature at 65°-90°F (18°-32°C) for optimum print drying performance. Lower temperatures increase the ink viscosity, impairing both flow and drying. 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 drying variables/conditions.

### DRYING/ CURING

*Drying:* the 8400 ink must be dried with heat immediately after printing. The ink film must be dry to touch before subsequent layers are printed and dried.

Use conveyorized dryers set at temperatures of 150°F- 95°F (66°C-90°C) to initially dry each layer of ink to touch and to start the curing process. Not all the solvent will be removed after this initial drying.

*Curing:* after all the 8400 inks and 8449 Tie-Coat (if needed) have been printed, the finished prints must be baked for 1 hour at 195°F (90°C) with approximately 50% RH before further processing (forming and molding). This additional bake completes solvent removal and curing. Good air circulation and fresh air intake in dryers and ovens is necessary to remove the solvent.

Ink film that is not thoroughly dried and cured may transfer on to the mold during the forming process.

The 8400 block resistance should be carefully tested before stacking printed pieces.

### CLEAR / VARNISHES

*Mixing Clear / Overprint Clear:* 8426 Mixing Clear is a higher viscosity version of 8427 Overprint Clear. Both may be used to reduce the density of colors.

### ADDITIVES

Additives should be thoroughly mixed into the ink before each use. Prior to production check any additive adjustment to the ink.

*Reducer:* Use RE195 Thinner/Screen Wash to reduce the viscosity of the inks. Add up to 15% by weight. RE195 may also be used to wash ink from the screen.

*Retarder:* RE196 Retarder may be added up to 15% by weight; or in combination with RE195 Thinner/Screen Wash up to 15% by weight depending on production environmental conditions. The recommended sequence for adding additives is: thinner and/or retarder first and the catalyst or adhesion promoter last. Mix thoroughly.

*Flattening:* Use 8448 Flattening Paste to reduce gloss and to improve slip. Add up to 10% by weight. When injecting PC resin, the 8448 Flattening Paste can be added to 8400 inks to help prevent sticking to the mold during forming. 8448 is not needed when injecting ABS, PVC or PMMA because the 8449 Tie-Coat resists sticking to the forming mold.

### CLEAN UP

*Screen Wash (Prior to Reclaim):* Use IMS201 Premium Graphic Screen Wash.

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

### STORAGE

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

### PROCESSING

Printed parts that have been thoroughly dried and cured may be formed, die or laser cut and molded. Some films absorb atmospheric moisture; consult with the film supplier for information whether the printed films need to be dried prior to forming.

## 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 8400 Series Material Safety Data Sheet for further instructions and warnings.

**ADHESION  
TESTING**

It is imperative to check adhesion on a **fully cured** print:  
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.

**PRODUCT OFFERING**

**STANDARD  
PRINTING  
COLORS**

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

**HALFTONE  
COLORS**

Halftone Colors are formulated with increased densities in order to have the flexibility to satisfy most process color density requirements.  
Halftone Extender Base 84HTEX is used to reduce the density of any of the halftone colors.

**SINGLE  
PIGMENT  
TONERS**

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

**TRANSPARENT  
COLORS**

The Transparent Colors exhibit very good transparency and depth of color.

**HALOGEN-FREE  
COLORS**

The halogen-free colors are press ready and may also be used to match special colors. These colors are free of the halogens Chlorine and Bromine based on supplier information and in compliance with the electronics industry standard, IEC 61249-2-21 (<http://www.iec.ch/>).

**TIE COAT**

8449 Tie-Coat can be printed over 8400 inks, then injection molded with ABS, PVC or PMMA resins.

The 8449 is not inter-mixable with the 8400 Series inks.

**NON-  
CONDUCTIVE  
BLACK**

The NSC60 Non-Conductive Black is formulated to minimize conductivity in situations where static discharge is possible to occur during post print processing. To minimize or prevent electrostatic discharge (ESD) the NSC60 must be used in place of the 8452 Super Opaque Black. Process normally as any other 8400 ink.

**COLOR CARD  
MATERIALS**

The following is a list of screen printed samples available.  
*Conventional Color Card:* shows the Standard Printing Colors and Single Pigment Toners.  
*Halogen-Free Color Presenter:* shows all the halogen-free colors.  
*Special Effects Color Card:* shows Metallic, Pearlescent, Interference, and Multi-Chromatic effects mixed with clear.



# 8400 SERIES CVIM CONVENTIONAL INSERT MOLD DECORATING SCREEN INK

## TECHNICAL DATA SHEET

### PACKAGING

All items listed below are available in kilogram and/or gallon containers.  
Non-inventory standard products may require a minimum purchase per order.

Stock Number	Standard Printing Colors	Stock Number	Single Pigment Toners
8410	Primrose Yellow	8480	Yellow Toner
8411	Lemon Yellow	8481	Orange Toner
8412	Medium Yellow	8482	Carmine Toner
8413	Emerald Green	8483	Magenta Toner
8418	Scarlet Red	8484	Maroon Toner
8419	Fire Red	8485	Green Toner
8420	Brilliant Orange	8486	Blue Toner (GS)
8421	Peacock Blue	8487	Blue Toner (RS)
8422	Ultra Blue	8488	Violet Toner
8426	Mixing Clear	8489	Red Toner
8427	Overprint Clear		
8450	Barrier White		
8452	Super Opaque Black		
Stock Number	Halftone Colors	Stock Number	Transparent Colors
84HTEX	Halftone Extender Base	84PB12	Transparent Medium Yellow
84HTC	Halftone Cyan	84PB18	Transparent Red
84HTM	Halftone Magenta	84PB60	Stop Sign Red
84HTY	Halftone Yellow		
84HTBK	Halftone Black	NSC60	Non-Conductive Black (non-inventory)
Stock Number	Halogen-Free Colors (4-gallon minimum)	Stock Number	Tie-Coat
84200	Halogen-Free Mixing Clear	8449	Tie-Coat
84201	Halogen-Free Tinting Black		
84202	Halogen-Free Tinting White		
84205	Halogen-Free Super Opaque Black		
84206	Halogen-Free Super Opaque White		
84210	Halogen-Free Yellow		
84211	Halogen-Free Orange		
84212	Halogen-Free Red		
84213	Halogen-Free Carmine		
84214	Halogen-Free Magenta		
84215	Halogen-Free Maroon		
84216	Halogen-Free Violet		
84217	Halogen-Free Blue RS		
84218	Halogen-Free Blue GS		
84219	Halogen-Free Green		

**PACKAGING**

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

Stock Number	Additives/Reducers	Stock Number	Clean Up
8448	Flattening Paste	IMS201	Premium Graphic Screen Wash
NB72	Catalyst	IMS301	Premium Graphic Press Wash
NB80	Adhesion Promoter		
RE195	Thinner/Screen Wash		
RE196	Retarder		

*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.

**Nazdar Worldwide Headquarters**

8501 Hedge Lane Terrace, Shawnee, KS 66227-3290  
Toll Free: 866.340.3579 Phone: 913.422.1888 Fax: 913.422.2296  
e-mail: [custserv@nazdar.com](mailto:custserv@nazdar.com)

**Nazdar Limited**

Barton Road, Heaton Mersey, Stockport, England SK4 3EG  
Tel: + (44) 0.161.442.2111 Fax: + (44) 0.161.442.2001  
e-mail: [technicalservicesuk@nazdar.com](mailto:technicalservicesuk@nazdar.com)

<http://www.nazdar.com>