

223900RP 2-Part Urethane Overprint Clear has been formulated to exhibit excellent outdoor durability, good chemical resistance (excluding MEK) and flexibility. It has a high gloss and wet look finish. Urethane Clear is designed for printing over Nazdar® inks, including Plastic Plus, 9700, System 2 and 9600 series.

223900RP Urethane Overprint Clear A must be mixed with the correct proportion of the 223790RP Urethane Clear Part B prior to use. See the “PRINTING” section for instructions.

**SUBSTRATES** Cast and calendered vinyls, top coated polyester and polycarbonate

## USER INFORMATION

**MESH** 110 - 200 tpi (43 - 79 tpcm) monofilament polyester mesh for most applications

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

**SQUEEGEE** 60 - 80 durometer polyurethane squeegee

**COVERAGE** 1400 - 1800 square feet (130 - 167 square meters) per gallon depending upon ink deposit

### PRINTING

*Preparation:* Combine Parts A and B as described below. Proportions are important, as they will affect the performance of the cured Clear. To ensure uniformity, blend ingredients with a mechanical mixer.

**By Weight**

223900RP Part A 85%  
223790RP Part B 15%  
 100%

**By Volume**

223900RP Part A 128 fl. oz. – 1 Gallon  
223790RP Part B 20 fl. oz.  
 148 fl. oz.

After combining parts A and B, the approximate pot life of the ink will be 5 to 7 hours. 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.

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 and film thickness.

Pretest to determine optimum printing performance for a particular set of ink, substrate, screen, press, and drying variables/conditions.

### DRYING/ CURING

This product is designed to crosslink, or “cure” over time. Properties such as adhesion, chemical resistance, and surface hardness will improve as the curing process proceeds. The curing process is severely retarded by the presence of residual solvent in the printed ink film. Therefore, we recommend jet-drying to remove the volatile solvents and to accelerate the curing process. At normal room temperature, thorough curing will occur after several days. The curing process may be accelerated with the application of heat. The user must test to determine the level of cure necessary to ensure proper performance in post-print processing.

A starting point guideline for successful drying/curing is as follows:

**Jet dry** – adjust the temperature and belt speed so that the printed parts remain in the heat chamber for a minimum of 30 seconds, and the substrate reaches a minimum of 160°F (verifiable with heat-sensitive temperature indicating labels). Cool the parts to a temperature below 100°F before stacking. Printed parts should be tack-free, indicating that most of the volatile solvent has been removed.

**Curing** – Allow the parts sufficient time to cure as much as necessary to ensure proper performance in post-print processing. Curing may be accelerated by increasing the ambient temperature (such as in an oven). Generally, 30-45 minutes in an oven with a temperature of about 200°F (the substrate reaches 170°F) will cause this product to cure sufficiently to withstand most post-print processes. Curing continues over time, even after baking. **The user must test to determine the level of cure necessary to ensure proper performance in post-print processing.**

### 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 223750RP Urethane Clear Thinner to reduce the viscosity of this ink. Add up to 10% by weight.

*Retarder:* Use RE189 Retarder Thinner to slow down the drying time. Add up to 10% by weight.

### 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° -90°F (18° -32°C). Ink taken from the press should not be returned to the original container.

## GENERAL INFORMATION

### INK HANDLING

All personnel mixing and handling this product 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 2 Part Urethane Material Safety Data Sheet for further instructions and warnings.

**ADHESION TESTING**

Allow the printed part to cool down before checking for adhesion by:

1. Cross hatch tape test – use a cross hatch tool or sharp knife to cut through the ink film only; then apply 3M #600 clear tape on cut area, rub down, let set for one minute and then rip off at a 180° angle. Ink should only come off in actual cut areas.
2. Fingernail scratch test – scratch through the cross hatched area. Thoroughly cured ink will resist scratching and should be difficult to remove.

**WEATHERING / OUTDOOR DURABILITY**

When 223790RP 2 Part Urethane Overprint Clear is properly catalyzed, dried, cured and tested for adhesion, outdoor durability up to 5 years can be achieved when mounted vertically in the Central U.S.A.

While outdoor durability cannot be specified exactly; 223790RP can increase the durability of a screen printed outdoor durable ink on a durable substrate approximately 20%, for example, a 4 year rated ink/substrate construction may extend to a 5 year construction. 223790RP cannot enhance poorly rated ink colors or substrates to extraordinary outdoor durability.

Over a 3 to 5 year period on a 5 year durable construction, gradual underlying ink color change and overprint clear loss of gloss should be expected. Variables affecting a printed part's durability include:

- Ink film thickness and post cure
- Underlying Ink 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

**PACKAGING**

Urethane Part A is available in gallon containers. Urethane Part B is available in quart containers.

Stock Number	Standard Printing Colors
223900RP	Urethane Clear Part A
223790RP	Urethane Clear Part B

**PACKAGING**

Additives/Reducers are available in gallon containers.  
Cleaners are available in gallon, 5 gallon and 55 gallon containers.

Stock Number	Additives/Reducers	Stock Number	Clean Up
223750RP	Urethane Clear Thinner	IMS 201	Premium Graphic Screen Wash
RE189	Retarder/Thinner	IMS 301	Premium Graphic Press Wash



# 223900RP 2 PART URETHANE OVERPRINT CLEAR SCREEN INK

## TECHNICAL DATA SHEET

*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, this product 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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