

# Nazdar 223900RP 2 Part Urethane Overprint Clear Screen Ink

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

## Substrates

- Cast vinyl
- Calendered vinyl
- Top coated polyester
- polycarbonate

Substrate recommendations are 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

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

### Stencil

Use direct emulsions and capillary films which are solvent resistant.

### Squeegee

60 - 80 durometer polyurethane squeegee.

### Coverage

Estimated 1400 - 1800 square feet (130 - 167 square meters) per gallon depending upon ink deposit. Reference [www.nazdar.com](http://www.nazdar.com) for examples of coverage calculations.

### Printing

223900RP Urethane Clear must be combined with 223790RP before printing. Combine Parts A and B as described below. Proportions are important, as they will affect the performance of the cured clear. To ensure ink is uniformly mixed, blend ingredients with a mechanical mixer.

Mixing by weight:

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

Mixing by volume

223900RP Part A 128 fl. oz. or 1 gallon

223790RP Part B 20 fl. oz.

148 fl. oz.

After combining parts A and B the approximate pot life 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.

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 drying variables/conditions.

### Drying / Curing Parameters

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 slowed by 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 addition 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 part remains in the heat chamber for a minimum of 30 seconds, and the substrate reaches a minimum temperature of 160°F. Cool the parts to a temperature of 100 °F before stacking. The ink should be tack free, indicating that most of the volatile solvent has been removed.

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

## Adhesion Testing

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

## Common Performance Additives

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

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

## Cleanup

**Screen Wash (Prior to Reclaim):** Use IMS201 Premium Graphic Screen Wash, IMS203 Economy Graphic Screen Wash, or IMS206 Graphic Auto Screen Wash.

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

## Storage / Shelf Life

Store closed containers at temperatures between 65°-78°F (18°-25°C). Storing products outside of these recommendations may shorten their shelf life. Ink taken from the press should not be returned to the original container; store separately to avoid contaminating unused ink.

Urethane Clear Part A and Part B are useable for a period of at least 48 months from the date of manufacture. To obtain the official shelf life letter, Contact Nazdar Technical Service at [InkAnswers@nazdar.com](mailto:InkAnswers@nazdar.com) or see contact listing at the end of this document.

## 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 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).

### Weathering / Outdoor Durability

Properly cured 223790RP 2 Part Urethane Clear is formulated to provide 5 years 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 drying/curing
- Poorly rated ink/substrate construction
- Substrate type and age
- Mounting angle and directional orientation
- Geographical location
- Degree of air pollution
- Excessive abrasion

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v 1 EN

Ref: v 1 EN

## Manufacturer's Product Offering

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

## Packaging / Availability

Contact your Nazdar distributor for product availability and offering.

223900RP is supplied in gallon containers.

223790RP is supplied in quart containers.

## Ink Items

Item Number	Color
223900RP	Urethane Clear Part A
223790RP	Urethane Clear Part B

## Additives / Reducers

Item Number	Color
223750RP	Urethane Clear Thinner
RE189	Retarder / Thinner

## Cleaners / Clean Up

Item Number	Color
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®.

## Nazdar Ink Technologies Offices Worldwide

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