

NSC UV Crystal Clear Transparent Screen Ink has been formulated to print on polycarbonate and some pre-treated polyester substrates commonly used as membrane overlays. These inks exhibit excellent clarity with very little haze, making them ideal for use as transparent window colors.

NSC UV Crystal Clear Transparent inks may be printed top or sub surface.

SUBSTRATES Polycarbonate and some pre-treated polyester (UV ink receptive primer)

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 255 threads per inch (100 threads per cm) monofilament polyester mesh for most applications

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

SQUEEGEE 70-90 durometer polyurethane squeegee

COVERAGE 2,000 - 3,800 square feet per gallon depending upon ink deposit

PRINTING

The NSC UV Crystal Clear Transparent Series inks are formulated as concentrates and are intended primarily as color matching toners. Color density may be reduced and cure speed is increased with the addition of NSC 29 Mixing Clear and/or RE310 Crystal Clear Reducer.

To achieve the best results some experimentation may be necessary. Variables to consider include: mesh count; flood speed; squeegee hardness; print speed; squeegee angle; peel; off-contact; and viscosity. The addition of NSC29 Mixing Clear or RE310 Reducer and/or CARE65 Flow Agent may be necessary for acceptable printability. Mixing the inks at least 24 hours before printing may also optimize print appearance. Prior to printing, gently mix with a spatula only, to minimize air bubbles in the ink.

The use of IR bars immediately after printing or allowing some time between printing and curing allows the ink film to flow-out better, creating a smoother cured appearance.

These inks may be over printed and under printed with the 3400 Series UV Nameplate ink; and may be printed over thoroughly dried 8800 Series Color-Vue Membrane solvent-based ink. Printing solvent-based ink over NSC UV Crystal Clear Transparent inks is not recommended. Mixing wet inks from different series is also not recommended. Inter-coat or ink to ink compatibility with the 3400 Series improves as NSC 29 Mixing Clear is added to NSC UV Crystal Clear Transparent inks.

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 and film thickness.

NSC UV Crystal Clear inks are not recommended for use with laminating adhesives.

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

The ink can be affected by stray UV light in and around a printing facility. Be aware of skylights, windows and overhead lights curing the ink in the screen. Light filters are recommended.

CURE PARAMETERS

The NSC UV Crystal Clear Transparent ink cures when exposed to a medium pressure mercury vapor lamp set at 300 watts per inch with a minimum of 300 millijoules (mJ/cm²) and 800 milliwatts (mW/cm²) of UV energy.

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

To increase millijoule levels, slow down the belt speed or scan speed. To increase milliwatt levels, increase the wattage setting of the UV reactor. To optimize millijoules and milliwatts 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 readings with the UVICURE Plus, reduce the belt speed to less than 40 ft/min.

CLEAR / VARNISHES

Mixing Clear: Use NSC29 Mixing Clear to reduce the density of colors.

ADDITIVES

All additives should be thoroughly mixed into the ink. It is recommended to mix the additives, cover and let the mixture set for 24 hours before printing. This time period is necessary to allow any air bubbles introduced into the mixture during the mixing to dissipate.

Reducer: Use RE310 Crystal Clear Reducer to reduce the viscosity of these inks and to improve printability. Add up to 20% by weight. The over addition of reducer may affect properties such as adhesion, cure, gloss and abrasion resistance.

Flow Agent: Use CARE65 Flow Agent to improve flow. Add up to 1% by weight. CARE 65 will make the ink film cloudy.

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

Inks react to light and temperature. 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

Direct skin contact to UV inks is the primary route of exposure and irritation. Therefore, it is recommended that all personnel handling these products 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 NSC UV Crystal Clear Transparent Screen Ink Material Safety Data Sheet for further instructions and warnings.

The NSC UV Crystal Clear Transparent Screen Ink is a one-part, 100% solids UV-curable screen printing ink and 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. Touch of ink surface – the ink surface will be smooth and slick.
2. Thumb twist – the ink surface will not mar or smudge.
3. Scratch surface – the ink surface will resist scratching.
4. 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.

Full adhesion characteristics are demonstrated within 4 hours after cure.

PRODUCT OFFERING

COLORS The Standard Printing Colors have excellent clarity.

COLOR CARD MATERIALS The following is a list of screen printed samples available.

NSC UV Crystal Clear Transparent Ink: shows all standard colors.

3400 Series UV Screen Ink Color Card: shows all standard 3400 colors.

PACKAGING All items listed below are available in kilogram containers.

Stock Number	Standard Printing Colors	Stock Number	Standard Printing Colors
NSC29	UV Crystal Mixing Clear	NSC35	UV Crystal Clear Violet
NSC30	UV Crystal Clear Yellow (GS)	NSC36	UV Crystal Clear Blue (GS)
NSC31	UV Crystal Clear Yellow (RS)	NSC37	UV Crystal Clear Blue (RS)
NSC32	UV Crystal Clear Red (BS)	NSC38	UV Crystal Clear Green
NSC33	UV Crystal Clear Red (YS)	NSC39	UV Crystal Clear Black
NSC34	UV Crystal Clear Magenta		

PACKAGING Additives/Reducers are available in quart or gallon containers.
Cleaners are available in quart, gallon and 55 gallon containers.

Stock Number	Additives/Reducers	Stock Number	Cleaners
RE310	UV Reducer	IMS203	Economy Graphic Screen Wash
CARE65	Flow Agent	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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