

3900 Series UV Flexible Banner UV Screen Ink

Code Ref: 494

technical information and application instructions

Substrates	Vinyl banner, cling vinyl, low tack vinyl and other flexible vinyls.
End Uses	Indoor and outdoor vinyl banners, low tack and cling vinyl window graphics

Product Information

The 3900 Series Flexible Banner Ink has been formulated specifically for vinyl banner applications requiring an ink film flexible enough to accommodate folding, sewing, and grommeting, while being block resistant when banners are stacked ink to ink. This ink will work well for cling vinyl applications that require extreme flexibility and the intercoat adhesion properties necessary for printing double sided window decals. The 3900 Series has been designed to adhere to highly plasticized vinyls.

The 3900 Series is a one-part, 100% solids UV-curable screen printing ink which exhibits a semi-gloss finish in all colours which is important to prevent face-to-face blocking. This ink is intended to work well straight from the container on a wide range of printing equipment.

The 3900 Series does **NOT** contain N-vinyl-2-Pyrrolidone (trade name V-Pyrol®).

Application 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 end of document.

Mesh	140-150T Monofilament polyester mesh is recommended for most applications. 120-165T Monofilament polyester can be used for specialty applications.
Stencil	Direct emulsions and thin capillary films that are solvent resistant, UV ink compatible, and yield a thin ink deposit will work best.
Squeegee	Sharp 70-90 single durometer polyurethane blades as well as multi-durometer blades that produce an even, thin ink deposit will work best.
Coverage	60-100 Square meters/kilo depending upon ink deposit.
Reducer	D564-S082 UV Reducer is to be used to reduce the viscosity of these inks by adding no more than 5% by weight. It is recommended that these inks be thoroughly mixed, and acclimatized to a 18°C-30°C environment prior to reducing.

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- Mixing Clear** Mixing Clear is used to reduce the density of colours, or as a clear base for metallic powders (refer to Metallic Colours mixing Guidelines later in this TDS). In process colours use Process Medium to maintain structure.
- Clean Up** Use Special UV Screen Wash D574-S016.
- Storage** These inks are reactive to light and temperature extremes. Store in a clean area below 35°C sealed tightly in dark plastic containers out of direct sunlight. For maximum shelf life, store ink in ambient temperatures of 15°C to 30°C. Ink taken from the press should not be returned to the original container; store separately to avoid contaminating unused ink.

General Guidelines

- Ink Handling** Direct contact with the skin is the primary route of exposure and irritation with UV inks. Therefore, it is recommended that all personnel mixing and 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 absorbent cloth or rag (**DO NOT USE SOLVENT OR REDUCER**). Proceed to wash and rinse the affected area with soap and water. Consult the 3900 MSDS for further instructions and warnings.
- Printing** 3900 Series Inks are formulated to print from the container with excellent flow characteristics. If the need arises to reduce the viscosity, add 2-5% of D564-S082 UV Reducer. The use of a mixer is recommended to thoroughly mix inks prior to printing.
- Inks will maintain optimum print and cure performance when the ink temperature is 18°C - 30°C. Temperatures below 18°C will increase the ink viscosity, impairing both flow and cure. Elevated temperatures will lower the ink viscosity, reducing print definition, film thickness and opacity. When the ink is cold, it is best to mix the ink with a high-speed mixer until it returns to the proper temperature, 18°C - 30°C. Add reducer at this point if necessary (as advised not more than 5%).
- Cure Parameters** The 3900 Series Inks are formulated to cure when exposed to a medium pressure mercury vapour lamp set at 200 watts per inch at a belt speed of 15-18 meters per minute.
- 150 - 180mJ/cm² @ 600mW/cm²
- The values mentioned above are representative of measurements taken using an EIT UVICURE Plus radiometer measuring the UVA bandwidth (320-390nm). When measuring the peak irradiance using the UVICURE Plus, it is recommended that a belt speed less than 12 meters per minute be used in order to obtain accurate readings.
- These High Performance Inks can be affected by stray UV light in and around a printing facility resulting in the appearance of an ink drying in the screen during the course of a long run. Be aware of skylights, windows and overhead lights possibly curing the ink in the screen. Precautions include the use of light filters that block out the damaging wavelengths.
- If ink is left on screen while not printing (lunch breaks etc.) it is advisable to cover with black plastic sheeting.

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Adhesion Testing Test adhesion as follows:

1. **Touch of ink surface** – The ink will be smooth and slick.
2. **Thumb twist** – The ink surface will not mar or smudge.
3. **Scratch surface** – The ink will resist scratching.
4. **Cross hatch tape test** – use a cross hatch tool or a sharp knife to cut through the ink film only, apply 3M #600 clear tape to the cut area, rub down, wait for 1 minute and rip off at a 180° angle. Ink should only come off in the actual cut area.

caution

Please proof this ink, reduced to the consistency you wish to adopt, on a sample of the ACTUAL SUBSTRATE you will be printing BEFORE starting a production run.

Give the proof 24 hours to post cure then check for: Abrasion resistance, adhesion, print appearance and correctness of colour. The adequacy of this ink in these properties cannot be fully established on laboratory equipment on a small scale.

Keep away from heat and open flame. Use with adequate ventilation. Avoid prolonged or repeated contact with skin. Avoid prolonged breathing of vapour or spray mist. Keep container closed when not in use.

GL stands behind the quality of this product. GL cannot, however, guarantee the finished results because GL 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 GL.

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Last date amended: 7 February 2023