Norcote Technical Bulletin

LQS-UV97198

Super Magnetic Liquid Steel

Suggested Uses:

LQS-UV97198 Liquid Steel is a screen-printable ink system designed for use with Magnetic Display Systems. When printed on the back of substrates, Liquid Steel will hold the paper graphic to the mounted magnetic display. No adhesive is required to mount the sign to the magnetic display. **It is the responsibility of the end user to pretest all substrates with Norcote® products prior to use in production.**

Product Features

- **Requires Only A Single Pass if Processed Correctly**
- **For Use on 10 Point (pound) Paper and Card Stocks, Flexible and Rigid Vinyl, Polycarbonate and Lexan**
- **Excellent Cure and Adhesion Properties**
- **NVP Free**
- **Compatible With Norcote UV9 Series Inks (As used on paper substrates)**

Description of Application:

Liquid Steel works by having a thick deposit of ink on the reverse of a graphic printed on paper. The thicker the ink film, the better holding power the sign will have. For economical reasons, there are two ways that the Liquid Steel can be printed:

100% Coverage:
The Liquid Steel can be printed across the entire reverse of the graphic. This offers maximum holding power and ay be the best option for heavier paper stocks.

100% Coverage Border / 20% Coverage Interior:
This option allows you to print less Liquid Steel and still have holding power to keep the graphic in place on the Magnetic Display System. The idea is that you print a flood border around the outside perimeter of the sheet, and print a 20% to 50% pattern in the interior section of the sheet. This saves the amount of ink consumed per part. The size of the 100% Border will depend on the size of the sheet. The larger the sheet, the larger the border proportionately. A four (4) inch border should work for most applications under 3 feet in width. For larger formats, testing is recommended to determine the ideal border dimensions.

Ink Preparation and Mixing:

Liquid Steel must be premixed prior to each use by mechanical mixing to ensure the magnetic material is removed from the bottom of the container and evenly dispersed. Hand mixing will not be adequate for this product due to the magnetic pigment density. The types of items that would be suitable to mix Liquid Steel are listed below.

A. Standard dispersion mixer or low speed chemical mixer.
B. Drill press with 3 or 4 blade prop or axial type blade.
C. ½" portable drill with 3 blade prop attachment.
In all cases the blade and shaft will need to match the container size. You will need to mix the 1 gallon container, and then pour the fluid over into another container. You will then need to scrape the magnetic material left out of the original container adding it to the mixing container and mix it until homogenous. A paint scraper or ink knife works well to remove the magnetic material.

Material that has been mixed will settle out again over a few days so if you are saving the screen scrape off you will need to check to see if it needs blending.

As always you should use common safety practices when doing this. A holder for the container being mixed may be needed so it doesn't spin around and throw out the ink.

Mesh:

A Polyester mesh of 125-160 threads per inch is recommended. Mesh tension should be at least 16 Newtons/cm^2 on a rigid frame.

Stencil:

Use of UV compatible direct and thick capillary films (40-90µm) is recommended.

Squeegee:

A Sharp 90 durometer polyurethane squeegee is recommended.

Coverage:

200 to 300 square feet per gallon based on an ink film deposit.

Thinner:

Do not use Thinner. Contact Norcote to discuss other options.

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LQS-PC76598

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Cure & Adhesion:
A minimum of 250 mJ/cm2 and 400 watts per inch is required for complete cure. We recommend cure settings of two lamps at 200 watts per inch setting with a belt speed between 30 and 60 feet per minute. Adhesion should be, at a minimum, 95% complete upon exit of the curing unit, with full adhesion within four (4) hours of initial cure. If a loss of adhesion occurs, an increased lamp setting or slower belt speed may correct cure and adhesion.

Additives:
No additives are required for the LQS-PC76598 Liquid Steel. Additives will adversely affect the performance of the Liquid Steel. The use of powders, metallic pastes, fluorescent pastes, thinners and other liquid additives is not recommended.

Recommendations for Printing:
Liquid Steel works by having a thick deposit of ink on the reverse of a graphic printed on paper or as a border. The thicker the ink film, the better holding power the sign will have. For economical reasons, there are two ways that the Liquid Steel can be printed:

100% Coverage:
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Storage & Available Warranties
All UV Liquid Steel ink should be stored in tightly closed, black polyethylene containers in an area with the temperature not to exceed 90° F (32.2° C). Avoid Freezing. Do not store ink below 32° F. Avoid direct sunlight and indirect white light. Excess ink from print runs should be stored in separate containers to avoid contamination and is not covered under any warranty. When stored under these conditions, Norcote warrants the Products shall be free from defects in material and manufacture for a period of six (6) months from the date of sale for the Liquid Steel standard ink with no additives. Norcote will not warrant any custom colors containing metallic pastes or any inks intermixed with competitor products. Any warranties provided will be limited to the price paid for the actual products used which give rise to the warranty claim.

This Technical Bulletin is intended to be used for informational purposes only, and is in no way intended to create any warranties or other obligations on behalf of Norcote. All warranties, terms and/or conditions for a particular product will be specified on the applicable invoice and are only valid upon the creation of a legally-binding contract.

Testing
Due to the inability of Norcote to anticipate or control the conditions under which the Products and information relating thereto will be used and/or stored, Norcote cannot guarantee the results obtained from using the Products. Any Suggested Uses are merely representative, and because the final product will depend on a number of specific factors, the end user should pretest all substrates with the Products prior to use in production.

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