

# Flat Vinyl (VYL)

**SOLVENT**

Screen Graphics

## Fast Drying Matte Finish Ink for Vinyl and Plastics

### Features

- High Opacity
- Smooth Matte Finish
- Excellent Screen Stability and Self-Solvency
- Very Low Odor
- Safe, Low Temperature, Jet Drying
- Wide Adhesion Range
- Signature Receptive

Media Type
Pressure Sensitive Vinyls
Rigid Vinyls
Static Cling Vinyls
Vinyl Banner Stocks
Some Grades of Styrene
Many Top-Coated Polyesters
Acrylic and Polycarbonate Sheeting (not intended for embossing or touch panel actuation)
ABS

### Thinning

Stir well before every use. VYL inks should be thinned 10% to 15% with K37270 Thinner. For hot shop conditions or slow printing applications, use K67020 Retarder.

### Mesh

VYL inks print well through 196 to 305 (78 to 120/cm) monofilament polyester fabrics.

### Stencils

Stencil materials must be solvent resistant. Dirasol 911, SuperCoat 915, 916, 917, AST 210 and 220 dual cure, Dirasol Zenith Triple Cure or Dirasol 132 one pot direct emulsions are recommended to give the highest print quality and stencil durability. Solvent-adhered stencil films should not be used with VYL inks.

### Drying

VYL inks will jet dry at 160° F (70°C) in 30 - 45 seconds. Overprints may require additional dwell time.

VYL inks will air dry in 15 to 20 minutes dependent on substrate and ink deposit. If retarders are used, allow additional drying time.

### Coverage

Standard line colors should yield 1200 to 1800 square feet /gallon (30 to 45 m<sup>2</sup>/liter) depending on film thickness.

### Wash Up

Wash up on press with Xtend™ press washes and after the production run with Xtend™ ink degradents.

### Pre-Production Tests

It is strongly recommended that all substrates be tested before use as supposedly similar substrates can vary between manufacturers and even between different batches from the same manufacturer.

Certain plastics may be impregnated with lubricants that, like plasticizer migration, may impair adhesion and block resistance, even a considerable period after printing. Other plastics can become brittle or caused to curl after printing.

**END-USER MUST DETERMINE SUITABILITY OF THIS PRODUCT FOR THE INTENDED USE PRIOR TO PRODUCTION.**

### Compatibility with Other Inks

VYL inks may be printed over properly dried prints of Polyplast or Tech Mark. Likewise, Polyplast or Tech Mark may be printed over properly dried prints of VYL ink. VYL inks may be intermixed with Polyplast or Tech Mark. This feature allows printers the ability to adjust gloss levels of the finished ink deposit.

### Outdoor Use

Accelerated weathering tests have been conducted on prints produced with VYL inks. Under these conditions, VYL inks withstood 1000 hours of testing before significant color deterioration was evident. Accelerating machine weathering tests cannot be precisely related to actual outdoor performance, but it is considered that 1000 hours of exposure approximately equates to up to two years outdoor exposure in temperate climates.

Product Information

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### Inflatable Items

Due to exceptional flexibility on vinyls, VYL inks are suitable for inflatable retail displays, toys, and other inflatable products. VYL inks listed on this product information sheet are formulated to be free of lead. However, if VYL inks are being used in applications affected by toy specifications or other heavy metal specifications, each batch must be analyzed and certified by an independent laboratory.

### Vacuum Forming

VYL inks are recommended for vacuum forming on PVC, some polystyrenes, ABS, certain grades of CAB, and cellulose acetates.

### Second Surface

VYL inks are suitable for second surface acrylic and polycarbonate graphic overlays and nameplates that **do not** involve embossing, debossing, or touch panel switch actuation. VYL inks adheres aggressively to acrylic and polycarbonate, and when properly jet dried. VYL inks are compatible with the transfer adhesives. Due to the high solids level used in VYL ink, it is not recommended for applications requiring embossing or switch actuation.

### Heat Sealing/Radio Frequency Welding

VYL ink colors, with the exception of the K37287 and K82248 Blacks, are recommended for applications requiring heat sealing or radio frequency welding. However, due to variations in the heat sealing process, it is essential to test the ink, substrate, and sealing combination prior to use.

### Double Sided Decals

VYL inks are suitable for the production of double sided window decals. The first side (mirror image) color(s) are printed first followed by a base coat of K84777 Opaque White. The white is then overprinted with an obliterating gray to prevent image show through. The obliterating gray is a mixture of 90% K84777 White and 10% K37287 Black. A second base coat of K84777 is then applied followed by the right reading side color(s). It is essential that each coat of ink is thoroughly dried before overprinting. In this application, the image colors are normally printed through 230 to 280 (90 to 110/cm) monofilament fabrics with the base coats and obliterating gray typically printed through 180 to 195 (71 to 77/cm) fabrics.

### Signature/Offset Receptive

K84777 Super Opaque White will receive ballpoint, felt tip, and many other pen inks. In addition when properly dried, K84777 Opaque White will also receive many offset inks.

**Before using VYL inks for any special uses, the full process must be thoroughly tested prior to initiating production.**

### Color Availability

The VYL inks color range includes 10 standard printing colors, eleven base matching system colors.

Matching system colors are designed to enable printers to readily match PANTONE®\* and most other colors in-house. The system consists of base colors, selected for cleanliness of tone and suitability for intermixing. Using the matching system colors plus K37287 Black, K77901 Tinting White, and K77133 Mixing Clear, almost any color can be produced.

### Standard Colors

VYL-150 Primrose Yellow	K91956
VYL-152 Medium Yellow	K91958
VYL-350 Fire Red	K91821
VYL-351 Bright Red	K91961
VYL-352 Dark Red	K91962
VYL-504 Ultra Blue	K72408
VYL-700 Black	K37287
VYL-701 Opaque Black	K82248
VYL-800 White	K37288
VYL-801 Opaque White	K84777

### Matching System Colors

VYL-10 Green Shade GS Yellow	K77902
VYL-14 Red Shade RS Yellow	K77551
VYL-30 Yellow Shade YS Red	K77547
VYL-31 Blue Shade BS Red	K77548
VYL-35 Magenta	K77550
VYL-40 Blue Shade BS Green	K77549
VYL-41 Yellow Shade YS Green	K77552
VYL-50 Green Shade GS Blue	K77553
VYL-52 Red Shade RS Blue	K77554
VYL-70 Tinting Black	K77778
VYL-80 Tinting White	K77901
VYL-900 Transparent Base	K37446
VYL-901 Mixing Clear	K77133
VYL-1000 TMI Overprint Clear	K77747
VYL-1001 Matte Overprint Clear	K76178

### Thinners/Retarders

K37270 Thinner	K37270
K67020 5100 Thinner/Retarder	K67020

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## Storage

Containers should be tightly closed immediately after use. At the end of long printing runs, surplus ink from the screen should be disposed of. Refer to Material Safety Data Sheet (MSDS) for materials and conditions to be avoided. In the interest of maximum shelf life, storage temperatures should be between 50°F (10°C) and 77°F (25°C). When stored under these conditions the maximum shelf life is shown by the use by dates, which are clearly marked on all ink containers.

## Safety and Handling

Refer to MSDS for safety, handling, waste disposal and regulatory information. VYL inks listed on this product information sheet are formulated to be lead free. All colors have been formulated to contain no pigments which contain lead or other heavy metals. These products are formulated to meet CONEG Packing Legislation and ROHS Electrical and Electronic Equipment Directive. If necessary, certification of lead and heavy metals content can be obtained from an independent laboratory.

*The information and recommendations contained in this Technical Data Sheet, as well as technical advice otherwise given by representatives of our Company, whether verbally or in writing, are based on our present knowledge and believed to be accurate. However, no guarantee regarding their accuracy is given as we cannot cover or anticipate every possible application of our products and because manufacturing methods, printing stocks and other materials vary. For the same reason our products are sold without warranty and on condition that users shall make their own tests to satisfy themselves that they will meet fully their particular requirements. Our policy of continuous product improvement might make some of the information contained in this Technical Data Sheet out of date and users are requested to ensure that they follow current recommendations.*

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