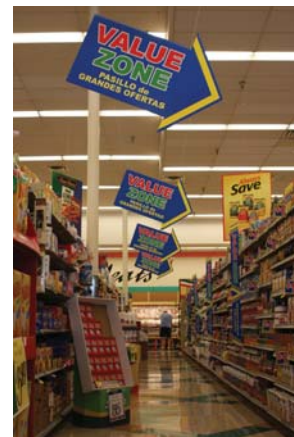




## UV Curable Ink System



### Suggested Uses:

The UV9 is a ultraviolet curable acrylic screen printing ink specifically formulated for multi-purpose use in Point of Purchase printing. This series demonstrates excellent adhesion properties while maintaining a high degree of flexibility for die-cutting. Formulated with premium light-fast pigments, the UV9 is an extremely durable outdoor system with very good opacity and fast cure speeds. The UV9 has a very high degree of reactivity for extremely high cure speeds, which works exceptionally well with in-line printers or carousel type presses.

### Product Features

- \* Non-blocking gloss finish
- \* Excellent adhesion & intercoat adhesion
- \* Excellent weatherability
- \* Perfect for die-cutting
- \* Low shrinkage properties for excellent weatherability on premium vinyl's

### Recommended Substrates:

Pressure sensitive vinyl, print treated polyester PSA films, rigid vinyl, coated and uncoated card stock, polystyrene, ABS and some coated metals. The UV9 Series will adhere to high density and fluted polyethylene with the addition of 3-5% Adhesion Promoter. The UV9 is not recommended for vinyl materials that contain a high degree of plasticizer. Full testing by the end user is recommended to determine suitability of product for a specific substrate and application.

### Mesh:

355 or higher mesh counts are recommended for opaque colors where a single (1) lamp system is used. 305 or higher mesh counts are recommended for opaque colors, where two (2) lamp systems are used. Mesh counts should be selected based upon the end user's ability to cure the ink deposit.

### Squeegee:

Sharp 70-90 durometer polyurethane blade or multi-durometer blades can be used. For optimal ink lay down, a sharp 80 durometer blade is recommended.

### Coverage:

3,200-3,600 square feet per gallon based on a film deposit of .40-.60 mil.

### Stencil:

Direct or capillary emulsions that are UV compatible, with a dry micron thicknesses between 7-10 $\mu$  is recommended. Thicker stencils can be used based upon the ability to cure the increased ink deposit.

### Thinner:

The UV9 Series is supplied in a print ready condition. For reduction of ink viscosity, the use of up to 10% of the UVO Thinner is recommended.

### Clean Up:

Use NSW-824 Screen Wash, or other UV compatible screen washes.

### Precautions:

Gloves and / or barrier cream is recommended when handling UV inks. Safety glasses are suggested, particularly for areas where ink may be splashed. If skin contact occurs, wash affected area with soap and water (do not use solvent or thinners).

### Cure & Adhesion:

A minimum of 125 mJ/cm<sup>2</sup> and .300 watts per inch is required for complete cure. Adhesion should be at a minimum of 95% from curing unit, with full adhesion within four (4) hours of initial cure. When using coarser screen meshes, cure conditions may need to be adjusted for the increased ink deposit. If a loss of adhesion due to insufficient cure is noticed, the use of 5-10% UV9 Series Mixing Clear will increase light penetration and improve cure.



**Outdoor Use:**

Extensive QUV accelerated weathering tests have been conducted on vinyl films with the UV9 Series. The UV9 Series withstood 1,500 hours of exposure in a QUV chamber, with 4 hour cycle times of UV light and condensation, with minimal color changes and marginal shrinkage.

Accelerated machine weathering are reference standards and can not precisely reproduce actual outdoor performance.

**Metallics:**

The UV9 011 Metallic Mixing Clear is supplied to use for mixing metallic powders and pastes, such as silver and gold. The increased viscosity of the Metallic Mixing Clear helps to ensure a good powder suspension. Recommended mixing ratios are: 8% by weight of Silver, 20% by weight of Gold.

**Color Range:**

Specific colors can be matched at Norcote® against prints, wet ink or PANTONE® numbers.

**Standard Colors:**

- UV9 123 Medium Yellow
- UV9 131 Brilliant Orange
- UV9 141 Fire Red
- UV9 151 Scarlet Red
- UV9 155 Rubine Red
- UV9 160 Rhodamine Red
- UV9 190 Process Blue
- UV9 200 Peacock Blue
- UV9 205 Reflex Blue
- UV9 210 Ultra Blue
- UV9 220 Emerald Green
- UV9 415 HT Weatherable Yellow
- UV9 485 Warm Red



**Color Matching Guide:**

- UV9 101 CMG Primrose Yellow
- UV9 111 CMG Lemon Yellow
- UV9 114 CMG Orange
- UV9 127 CMG Violet
- UV9 141 CMG Fire Red
- UV9 165 CMG Magenta
- UV9 230 CMG Blue
- UV9 325 CMG Green

**Whites, Blacks and Clears:**

- \*UV9 010 Mixing Clear
- UV9 011 Metallic Mixing Clear
- UV9 012 Overprint Clear
- UV9 015 Satin Overprint Clear
- UV9 026 Barrier White
- UV9 030 Shading Black
- \*UV9 031 Tinting White
- \*UV9 301 Opaque Black
- UV9 305 Jet Black
- UV9 311 Opaque White
- UV9 312 Dense Black

\* Used in Nor-Cote's Color Matching Guide

**Ultra Dot Halftone Inks:**

The Ultra Dot Halftone inks exhibit a smooth butter like viscosity for superior screen release. This exclusive feature allows for a much lower dot gain and dot height than traditional halftones. Estimated coverage is 2,500-2,800 square feet per gallon based on a film deposit of .40-.60 mil.

**Cure & Adhesion:**

Ultra Dot Series Halftone's cures well with one 200 watt per inch lamp at belt speeds between 60-80 feet per minute using 355-420 monofilament polyester mesh. Adhesion should be a minimum of 95% from curing unit with final adhesion developing within four (4) hours of initial polymerization. Coarser fabrics can be utilized; however, cure parameters may need to be adjusted for the increased ink film. If a loss of gloss or adhesion due to insufficient cure is noticed, the use of 5-10% Ultra Dot Series Halftone's Mixing Clear or HT Base will increase light penetration and improve cure.

**Outdoor Use (Ultra Dot):**

Extensive accelerated weathering tests have been completed on vinyl films with Ultra Dot Series Halftone's. Ultra Dot Series Halftone's withstood 1000 hours of exposure with 4-hour cycle times of UV light and condensation at elevated temperatures with minimal color change and marginal shrinkage. Accelerated machine weatherings are reference standards and can't precisely reproduce actual outdoor performance. Based on prior correlations of accelerated testing versus real time Florida exposure, 500 hours is equated to approximately one year, 45° south Florida. The use of premium grade, long-term vinyl films are recommended for all applications intended to weather up to three (3) years.

Product Identification	Density
UV9 410 HT Yellow	1.10
UV9 420 HT Magenta	1.75
UV9 430 HT Cyan	1.80
UV9 440 HT Black	2.00
UV9 450 HT Base	N/A

Product Identification	Density
UV9 510 HD HT Yellow	1.20
UV9 520 HD HT Magenta	2.20
UV9 530 HD HT Cyan	2.10
UV9 540 HD HT Black	2.10

Product Identification	Density
UV9 710 Ultra Dot HT Yellow	.80
UV9 720 Ultra Dot HT Magenta	1.35
UV9 730 Ultra Dot HT Cyan	1.25
UV9 740 HT Ultra Dot Black	2.00

**Fluorescent Colors:**

Fluorescent pigments are not lightfast and are not recommended for use outdoors or in direct sunlight. Fluorescent colors are available upon request. Fluorescent pigments are not light fast beyond 60-90 days even with the use of an overprint clear. For maximum brightness and color stability, 230-260 mesh count is recommended.

Chartreuse  
Orange/Yellow  
Orange  
Orange/Red  
Rocket Red  
Pink  
Green  
Blue

**Metallics:**

Introducing metallic materials into an ink will reduce the shelf life of the ink. Actual shelf life is dependent upon individual users conditions. As a general rule, it is recommended that only enough metallic ink is mixed for one days use (approximately 8 hours). Paste should be stored between 65° F-95° F to avoid solidification. If this occurs, reliquify the product by placing in an area with temperatures of 25° C-35° C.

040 Gold Paste  
042 Silver Paste  
044 Red Gold Paste  
046 Copper Paste  
240 Rich Gold Ink  
242 Silver Ink



## Storage & Available Warranties

All UV9 Series inks should be stored in tightly closed, black polyethylene containers in an area with the temperature not to exceed 90° F (32.2° C). 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 one (1) year from the date of sale for the UV9 Series standard inks, with no additives, and for a period of one (1) month from the date of sale for any custom color containing Day Glo® JZB or T-Powder. Norcote will not warrant any custom colors containing metallic pastes. 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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