

Imagemark XR Series

Version 1, 06.15.2007



Imagemark XR is a UV curable screen printing ink formulated specifically for multiple substrate adhesion performance. XR is the broadest ink system of its type offering flexibility for pressure sensitive vinyl applications with the unique versatility to adhere to nearly all point of purchase stocks, including HDPE and fluted polyolefin stocks without the addition of catalyst.

Performance Properties

- Outstanding adhesion to a variety of substrates
- Rapid cure rates, ideal for multi-color presses
- Durable, non-block finish for double-sided prints
- No additives required for Coroplast®
- Low tack finish for easy handling
- Good water resistance
- Flexible for multi-layer applications/die-cutting
- N-VP and heavy metal free

Coverage

3,200 to 3,600 sq. feet per gallon based on ink deposit of .40-.60 mil dependant on color and printing conditions.

Curing

Ink will cure well when printed through 355 (140cm) plain weave polyester mesh or finer. XR's optimal cure window of 125-175 mJ / 550-650 mW is generally achieved with one 200 watt per inch mercury vapor lamp at belt speeds between 65-75 feet per minute (19-23m/min). This should provide thorough cure of the product. Cure speeds may vary as thicker material and dark surface colors require more energy.

Adhesion should be a minimum of 95% from curing unit with final adhesion developing within six hours of initial polymerization. Coarser fabrics can be utilized; however, cure parameters may need to be adjusted for increased ink film.

If a loss of gloss or adhesion due to insufficient cure is noticed, 5-10% XR Mixing/Overprint Clear will increase light penetration and improve Cure.

The XR Imagemark system when properly cured develops an extremely versatile high gloss, water resistant ink film. Even though the cured ink film has been engineered to optimize processing and handling, the printer must assume responsibility for pre-testing and qualifying the parameters for stacking printed parts prior to each run.

The intensity of cure, weight or caliper of the material and/or elevated ambient temperatures and humidity of the printing and storage environments will influence block resistance.

Under curing of XR Imagemark can radically affect the physical properties of the inks. Do not expose stacks of printed materials to environments that may introduce high levels of moisture and water. Printed materials must be stored in a dry area. It is also recommended that additional precautions be made for shipping by truck as temperatures in trailers can exceed 160°F / 70°C. XR Imagemark is **not** recommended for polyethylene banner applications.

Recommended Substrates

- ABS
- Acrylic
- Anodized Aluminum
- Board Stock
- Coated and Uncoated Paper
- Expanded Foam PVC (Sintra®, Celtec®)
- Fluted Polyolefin's (*)
- Many Coated Metals
- Polycarbonate
- Polyethylene Sheet (*)
- Polystyrene
- Pressure Sensitive Vinyl
- Print Treated Electrostatic Vinyl
- Rigid Vinyl

* A minimum of 40 Dynes of surface energy is recommended for all Polyethylene and Polyolefin stocks. Always check adhesion immediately and overnight to ensure the print meets the end use requirements prior to production runs.

Printing

Mix ink well prior to use. While supplied in press ready condition, XR may be reduced up to 10% with #11337 Thinner. Care should be taken to print the ink at optimal temperature 70-90°F (21-27°C). Cool ink will have heavier viscosity and will not flow properly. Hot ink will be lower in viscosity resulting in poor definition and decreased opacity.

Lightfastness

At full strength and cured properly, XR colors are formulated to withstand 2-3 years of exterior exposure. The use of XR overprint clear will increase the duration of outdoor durability.

Premium grade, calendared vinyl films are recommended for all applications intended to weather three (3) years.

Factors that will alter the outdoor durability of the ink include but are not limited to: substrate grade/age, poor cure of ink film, formulas, directional positioning, ink film deposit, exposure to excessive abrasives and air pollutants.

Under no circumstances should colors requiring long term durability have mixing clear or white added to the formula.

In addition we do not recommend using less than 5% of any color in a blended formula for outdoor applications. Colors that should not be used for outdoor applications are CMS 164 BS Red, CMS 114 Orange, 180 Warm Red, and 131 Brilliant Orange.

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MIX INK WELL BEFORE USE. Follow any indications on the package, ask for the safety data sheets and always follow the indications contained therein. In case of doubt, please contact our Technical Service department.

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Lightfastness continued

For very lightfast applications requiring Orange, Blue shade Red, Green shade Yellow, medium shade Yellow we recommend BS Red toner, GS Yellow Toner, 111 Lemon Yellow and Orange toner be used when small quantities of red, yellow and orange are required for tinting white for pastel shades. The Polymeric color match system in many cases is not recommended for long term exterior exposure due to many pastels and transparencies in the system. When using the color match system contact Polymeric directly for possible color match recommendations.

Metallics

Use the Metallic Mixing Clear to prepare metallic ink as its increased viscosity helps insure a good particle suspension and extended shelf life. Recommended mixing ratios, by weight are:

- ◆ 28% gold paste
- ◆ 12% silver paste

For optimum coverage and opacity use, 280-305 (110-120cm) plain weave mesh. Use Solar Shield Clear for extended weatherability and to improve the non-tarnishing properties of the product.

Additives

- ◆ 11337 Thinner up to 10% as needed
- ◆ 1534 Adhesion Promoter up to 3% as needed
- ◆ 11939 Adhesion Promoter, 3-5% as needed
- ◆ 2980 Catalyst, 3% as needed (will gel in 4 hours)

Precautions

Read the material safety data sheet prior to processing. It contains instructions for precautions when handling inks. If ink comes in contact with skin, wipe ink off with a clean, dry cloth (do not use solvent). Wash and rinse the affected area with soap and water.

Process Printing

For superior halftone reproduction, halftones are available in a range of density levels. Additional control of density may be achieved with use of HT Base.

For best results, 380 (150 cm) or finer and a smooth, thin stencil coating should be utilized with process printing.

	Press Ready	High Density	Backlit Density
Halftone Yellow	0.90	1.10	1.35
Halftone Magenta	1.40	1.75	2.05
Halftone Cyan	1.40	1.80	2.20
Halftone Black	1.60	2.00	2.25

Storage

Care should be taken to store ink in tightly closed containers located in a cool (60-80°F/15-27°C) dark place. After long production runs excess ink from the screen should be properly disposed. With suitable conditions, unopened ink is expected to have a shelf life of approximately twelve (12) months from date of manufacture.

Color Availability

Imagemark XR is available in twenty opaque standard colors. Custom matches, metallic, fluorescent* and transparent colors are obtainable upon request.

101 Primrose Yellow	210 Ultra Blue
111Lemon Yellow	220 Emerald Green
123 Medium Yellow	225 Forest Green
131 Brilliant Orange	226 Lime Green
135 Vivid Orange	235 Teal
141 Fire Red	240 Purple
151 Scarlet Red	260 Brown
155 Rubine Red	301 Opaque Black
160 Rhodamine Red	311 Opaque White
180 Warm Red	312 Jet Black
190 Process Blue	026 Brilliant White
200 Peacock Blue	Mixing / Overprint Clear
205 Reflex Blue	Metallic Mixing Clear

*fluorescents are not included in statements detailing lightfastness.

Pantone Matching System® Colors

The nine Pantone® approved Color Matching System (CMS) shades are used to simulate the pantone Color Specifier colors. Formulas were designed for maximum opacity and are available in book or Imaging Color Source Software formats.

064 CMS GS Yellow
066 CMS RS Yellow
114 CMS Orange
121 CMS YS Red
127 CMS Violet
164 CMS BS Red
165 CMS Magenta
230 CMS Blue
325 CMS Green
Tinting White
Shading Black
Mixing / Overprint Clear

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A. Warranty Liability Limited to Purchase and Installation Costs

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MIX INK WELL BEFORE USE. Follow any indications on the package, ask for the safety data sheets and always follow the indications contained therein. In case of doubt, please contact our Technical Service department.